



Date August 3, 2026

RESOLUTION HOLDING PUBLIC HEARING REGARDING NELSON CONSTRUCTION SERVICES, LLC (OWNER) REPRESENTED BY ALEXANDER GRGURICH (OFFICER) FOR THE FOLLOWING REGARDING MULTIPLE PARCELS LOCATED IN THE VICINITY OF 1310 EAST DIEHL AVENUE, TO AMEND PLANDSM CREATING OUR TOMORROW PLAN TO REVISE THE FUTURE LAND USE CLASSIFICATION FROM COMMUNITY MIXED USE AND LOW DENSITY RESIDENTIAL WITHIN A NEIGHBORHOOD NODE AND A REGIONAL NODE TO HIGH DENSITY RESIDENTIAL WITHIN A NEIGHBORHOOD NODE AND A REGIONAL NODE, AND TO REZONE THE PROPERTY FROM "N3a" NEIGHBORHOOD DISTRICT, "MX3-V" MIXED USE DISTRICT, AND "MX3" MIXED USE DISTRICT TO LIMITED "NX3" NEIGHBORHOOD MIX DISTRICT, TO ALLOW THE CONSTRUCTION OF A MULTIPLE-HOUSEHOLD SENIOR LIVING BUILDING AND FUTURE RESIDENTIAL DEVELOPMENT

WHEREAS, the City Plan and Zoning Commission has advised that at a public hearing held on July 16, 2026, its members voted 12-1 in support of a motion to recommend **APPROVAL** of a request from Nelson Construction Services, LCC (Owner), represented by Alexander Grgurich (Officer) for the proposed rezoning of multiple parcels located in the vicinity of 1310 East Diehl Avenue from "N3a" Neighborhood District, "MX3-V" Mixed Use District, and "MX3" Mixed Use District to Limited "NX3" Neighborhood Mix District be found not in conformance with the PlanDSM: Creating Our Tomorrow Plan Land Use Plan designation of Community Mixed Use and Low Density Residential within a Neighborhood Node and Regional Node; and

WHEREAS, the City Plan and Zoning Commission has advised that at a public hearing held on July 16, 2026, its members voted 12-1 in support of a motion to recommend **APPROVAL** of a request from Nelson Construction Services, LCC (Owner), represented by Alexander Grgurich (Officer) for the proposed rezoning of multiple parcels located in the vicinity of 1310 East Diehl Avenue, to amend the PlanDSM: Creating Our Tomorrow Land Use Plan designation from Community Mixed Use and Low Density Residential within a Neighborhood Node and Regional Node to High Density Residential within a Neighborhood Node and a Regional Node; and

WHEREAS, the City Plan and Zoning Commission has advised that at a public hearing held on July 16, 2026, its members voted 12-1 in support of a motion to recommend **APPROVAL** of a request from Nelson Construction Services, LCC (Owner), represented by Alexander Grgurich (Officer) for the proposed rezoning of multiple parcels located in the vicinity of 1310 East Diehl Avenue, to rezone the property from "N3a" Neighborhood District, "MX3-V" Mixed Use District, and "MX3" Mixed Use District to Limited "NX3" Neighborhood Mix District to allow the construction of a multiple-household senior living building and future residential development, subject to the following conditions:



Date August 3, 2026

1. Any residential use containing two (2) or more dwelling units shall be restricted to occupancy by persons age 55 and older.
 2. A minimum 20-foot wide landscape buffer shall be provided along the southern perimeter of the site providing a transition for the adjoining residential properties in the vicinity of East Diehl Avenue.
 3. Plantings shall be provided within the buffer required by condition #2 at twice (2x) the quantity/density required by the medium buffer standard found in Chapter 135 of the City Code.
- ; and

WHEREAS, the Property is legally described as follows:

THE NORTH 170 FEET (EXCEPT THE EAST 710 FEET) OF THE NORTHEAST $\frac{1}{4}$ OF THE SOUTHEAST $\frac{1}{4}$ OF SECTION 27, TOWNSHIP 78 NORTH, RANGE 24, WEST OF THE 5TH P.M., NOW INCLUDED IN AND FORMING A PART OF THE CITY OF DES MOINES, POLK COUNTY, IOWA.

AND

PARCEL "H" BEING A PART OF LOT 2 IN BOWLARAMA PLACE, AN OFFICIAL PLAT, AND A PART OF THE NORTHEAST QUARTER (NE $\frac{1}{4}$) OF THE SOUTHEAST QUARTER (SE $\frac{1}{4}$) OF SECTION TWENTY-SEVEN (27), TOWNSHIP SEVENTY-EIGHT (78) NORTH, RANGE TWENTY-FOUR (24) WEST OF THE 5TH P.M., ALL NOW INCLUDED IN AND FORMING A PART OF THE CITY OF DES MOINES, POLK COUNTY, IOWA, AS SHOWN IN THE PLAT OF SURVEY RECORDED IN BOOK 13755 AT PAGE 292, IN THE OFFICE OF THE RECORDER OF POLK COUNTY, IOWA.

AND

THE SOUTH 10 ACRES OF THE SOUTHEAST $\frac{1}{4}$ OF THE NORTHEAST $\frac{1}{4}$ (EXCEPT PARCEL 'I' OF THE PLAT OF SURVEY FILED IN THE OFFICE OF THE RECORDER OF POLK COUNTY, IOWA ON MARCH 28, 2013, AND RECORDED IN BOOK 14716 PAGE 881; AND EXCEPT THE WEST 300 FEET; AND LESS .40 ACRE FOR ROAD RIGHT-OF-WAY); AND THE NORTH $\frac{1}{2}$ OF THE SOUTHWEST $\frac{1}{4}$ OF THE SOUTHEAST $\frac{1}{4}$ OF THE NORTHEAST $\frac{1}{4}$ (EXCEPT THE WEST 300 FEET) ALL IN SECTION 27, TOWNSHIP 78 NORTH, RANGE 24 WEST OF THE 5TH P.M., NOW INCLUDED IN AND FORMING A PART OF THE CITY OF DES MOINES, IOWA.

WHEREAS, on July 13, 2026, by Roll Call No. 26-0827, it was duly resolved by the City Council that the request for approval of the proposed amendment and rezoning be set down for hearing on August 3, 2026, at 5:00 p.m. at the City Council Chambers; and

WHEREAS, due notice of said hearing was published in the Des Moines Register, as provided by law, setting forth the time and place for hearing on said proposed rezoning; and



Roll Call Number

Agenda Item Number

55

Date August 3, 2026

WHEREAS, in accordance with said notice, those interested in said proposed rezoning, both for and against, have been given opportunity to be heard with respect thereto and have presented their views to the City Council.

NOW, THEREFORE, BE IT RESOLVED, by the City Council of the City of Des Moines, Iowa, as follows:

1. Upon due consideration of the facts, and any and all statements of interested persons and arguments of counsel, any objections to the proposed amendment and rezoning are hereby overruled, and the hearing is closed.
2. The proposed amendment to PlanDSM: Creating Our Tomorrow Plan to revise the future land use classification for the Property from Community Mixed Use and Low Density Residential within a Neighborhood Node and Regional Node to High Density Residential within a Neighborhood Node and a Regional Node is hereby approved.
3. The proposed rezoning of the Property, as legally described above, from "N3a" Neighborhood District, "MX3-V" Mixed Use District, and "MX3" Mixed Use District to Limited "NX3" Neighborhood Mix District to allow the construction of a multiple-household senior living building and future residential development, subject to the conditions set forth above, is hereby approved, subject to final passage of an ordinance rezoning the Property as set forth herein.

Moved by _____ to approve. Second by _____.

FORM APPROVED:

/s/ Emily A. Duffy

Emily A. Duffy

Assistant City Attorney

(ZONG-2026-000012) (COMP-2026-000008)

COUNCIL ACTION	YEAS	NAYS	PASS	ABSENT
BOESEN				
SIMONSON				
VOSS				
BARRON				
WESTERGAARD				
MANDELBAUM				
GATTO				
TOTAL				
MOTION CARRIED		APPROVED		

CERTIFICATE

I, LAURA BAUMGARTNER, City Clerk of said City hereby certify that at a meeting of the City Council of said City of Des Moines, held on the above date, among other proceedings the above was adopted.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my seal the day and year first above written.

Mayor

City Clerk

July 22, 2026

Communication from the City Plan and Zoning Commission advising that at their July 16, 2026 meeting, the following action was taken on request from Nelson Construction Services, LLC (owner), represented by Alexander Grgurich (officer), for the following regarding multiple parcels located in the vicinity of 1310 East Diehl Avenue:

- A) Determination as to whether the requested rezoning is in conformance with the PlanDSM Creating Our Tomorrow Comprehensive Plan.
- B) Amend the PlanDSM Creating Our Tomorrow Comprehensive Plan to revise the future land use classification of the property from Community Mixed Use and Low Density Residential within a Neighborhood Node and a Regional Node to High Density Residential within a Neighborhood Node and a Regional Node.
- C) Rezone the property from "N3a" Neighborhood District, "MX3-V" Mixed-Use District, and "MX3" Mixed-Use District, to "NX3" Neighborhood Mix District, to allow the construction of a multiple-household senior living apartment building and future residential development.

COMMISSION RECOMMENDATION: 12-1-1

After public hearing, the members voted as follows:

Commission Action:	Yes	Nays	Pass	Abstain	Absent
Leah Rudolphi	X				
Laura Kessel	X				
Jane Rongerude	X				
Johnny Alcivar		X			
Dominic Anania	X				
Matt Connolly	X				
Chris Draper					X
Clayton Elwell	X				
Todd Garner	X				
Katie Gillette	X				
Andrew Lorentzen	X				
Carolyn Jenison	X				
William Page	X				
Rick Trower	X				

Approval of the following:

Part A) The requested “NX3” District be found not in conformance with the existing PlanDSM future land use designation of Community Mixed Use and Low Density Residential within a Neighborhood Node and a Regional Node.

Part B) Amend the PlanDSM: Creating Our Tomorrow Comprehensive Plan to revise the future land use designation from Community Mixed Use and Low Density Residential within a Neighborhood Node and a Regional Node to High Density Residential within a Neighborhood Node and a Regional Node.

Part C) Rezone the property from “N3a” Neighborhood District, “MX3-V” Mixed-Use District, and “MX3” Mixed-Use District, to “NX3” Neighborhood Mix District with following conditions:

1. Any residential use containing two (2) or more dwelling units shall be restricted to occupancy by persons age 55 and older.
2. A minimum 20-foot wide landscape buffer shall be provided along the southern perimeter of the site providing a transition for the adjoining residential properties in the vicinity of East Diehl Avenue.
3. Plantings shall be provided within the buffer required by condition #2 at twice (2x) the quantity/density required by the medium buffer standard found in Chapter 135 of the City Code.

STAFF RECOMMENDATION TO THE P&Z COMMISSION

Part A) Staff recommends that the requested “NX3” District be found not in conformance with the existing PlanDSM future land use designation of Community Mixed Use and Low Density Residential within a Neighborhood Node and a Regional Node.

Part B) Staff recommends approval of the request to amend the PlanDSM: Creating Our Tomorrow Comprehensive Plan to revise the future land use designation from Community Mixed Use and Low Density Residential within a Neighborhood Node and a Regional Node to High Density Residential within a Neighborhood Node and a Regional Node.

Part C) Staff recommends approval of the request to rezone the property from “N3a” Neighborhood District, “MX3-V” Mixed-Use District, and “MX3” Mixed-Use District, to “NX3” Neighborhood Mix District.

STAFF REPORT TO THE PLANNING COMMISSION

I. GENERAL INFORMATION

1. **Purpose of Request:** The applicant is proposing to rezone the subject property, which includes multiple parcels, to the "NX3" District to allow the construction of a 5-story, 110-unit apartment building for senior housing. Future phases could include additional residential uses including multiple-household apartment buildings and/or townhomes. To allow the proposed density and uses, the subject property's land use designation would also need to be amended to High Density Residential. The subject property is located within a Neighborhood Node and a Community Node.

Any future construction or redevelopment on the subject properties must comply with all applicable site plan and design regulations contained in the Planning and Design Ordinance (Chapter 135 of City Code).

2. **Size of Site:** 12.4 acres (540,577 square feet).
3. **Existing Zoning (site):** "N3a" Neighborhood District, "MX3" Mixed Use District, "MX3-V" Mixed Use District.
4. **Existing Land Use (site):** The subject property is currently undeveloped. An existing driveway off East Diehl Avenue runs through the southeastern portion of the property providing access to an adjoining business along Southeast 14th Street.
5. **Adjacent Land Use and Zoning:**
 - North** – "MX3-V", "PUD", "P2"; Uses are highway-oriented commercial, "Southdale" PUD, and an Elementary School.
 - South** – "N3a", "RX1"; Uses are one-household residential and commercial.
 - East** – "MX3-V", "PUD"; Uses are highway-oriented commercial and "Kum and Go 573" PUD.
 - West** – "P2", "N3a"; Uses are an Elementary School and one-household residential.
6. **General Neighborhood/Area Land Uses:** The subject property is located on the west side of the SE 14th Street corridor and to the south of the intersection with East Kenyon Avenue. The surrounding area includes a mix of commercial, primarily to the east, and residential and public uses, along with undeveloped land to the west.
7. **Applicable Recognized Neighborhood(s):** The subject property is located in the South Central DSM Neighborhood Association and within 250 feet of the Easter Lake Area Neighborhood. All neighborhood associations were notified of the June 18, 2026, public hearing by emailing of the Preliminary Agenda on May 29, 2026, and the Final Agenda on June 12, 2026, and of the July 16, 2026, public hearing by

emailing of the Preliminary Agenda on June 26, 2026, and the Final Agenda on July 10, 2026. Additionally, separate notifications of the hearing for this specific item were mailed on May 29, 2026, (20 days prior to the June 18, 2026 public hearing) and June 8, 2026, (10 days prior to the June 18, 2026 public hearing) to any Neighborhood Association, and to the primary titleholder on file with the Polk County Assessor for each property within 250 feet of the site.

All agendas and notices are mailed to the primary contact(s) designated by the recognized neighborhood association to the City of Des Moines Neighborhood Services Department on the date of the mailing.

A summary of the neighborhood outreach meeting held by the applicant can be provided during the public hearing.

8. Relevant Zoning History: None.

9. PlanDSM: Creating Our Tomorrow Plan Land Use Plan Designation: Low Density Residential and Community Mixed Use within a Regional Node and a Neighborhood Node.

10. Applicable Regulations: Taking into consideration the criteria set forth in Chapter 18B of the Iowa Code, the Commission reviews all proposals to amend zoning boundaries or regulations within the City of Des Moines. Such amendments must be in conformance with the comprehensive plan for the City and designed to meet the criteria in 414.3 of the Iowa Code. The Commission may make recommendations to the City Council on conditions to be made in addition to the existing regulations so long as the subject property owner agrees to them in writing. The recommendation of the Commission will be forwarded to the City Council.

II. ADDITIONAL APPLICABLE INFORMATION

1. PlanDSM: Creating Our Tomorrow: The applicant is requesting that the future land use designation for the property be amended from "Community Mixed Use" and "Low Density Residential" within a "Regional Node" and "Neighborhood Node", to "High Density Residential" within a "Regional Node" and "Neighborhood Node". PlanDSM describes these designations as follows:

Low Density Residential: Areas developed with primarily single family and two family residential units with up to 6 dwelling units per net acre.

High Density Residential: Areas developed with primarily higher intensity multi-family housing with a minimum density over 17 dwelling units per net acre.

Community Mixed Use: Small- to medium-scale mixed use development, located on high capacity transit corridors or at the intersection of

transportation corridors. Community mixed use areas include both a mix of medium density residential and a mix of retail and service establishments designed to attract customers from a large service area encompassing multiple neighborhoods and may include specialty retail that attracts regional customers.

Regional Node: *Large-scale mixed use development, located on or at crossroads of major transportation corridors, emphasizing commercial, retail, and parking. High density residential may be incorporated within a development or along edges as transition to adjacent lower density residential. Mixed use may be horizontal as well as vertical, so there is no requirement that every building be mixed. May emphasize active uses (e.g. retail) on the ground floor, particularly at key intersections.*

Neighborhood Node: *These nodes are the smallest in size and offer services that provide for basic daily needs of the local population in the surrounding neighborhood. May include restaurants, shops and smaller scale businesses. Residential development including low-medium and medium densities may occur.*

The subject property including multiple parcels is currently zoned "N3a" Neighborhood District, "MX3-V" Mixed-Use District, and "MX3" Mixed-Use District. The Zoning Ordinance describes the "N3a" District as "intended to preserve the scale and character of residential neighborhoods developed predominantly during the 1950s, 1960s, and 1970s, typically in the ranch or split-level style pursuant to House B building type in section 135-2.14 of this code." The Zoning Ordinance describes the "MX3" District as "intended for mixed-use nodes and corridors within the city, where residents and visitors may access multiple uses by walking and automobile. This district accommodates higher intensity commercial uses at a smaller scale." For X and I district locations labeled with a "-V" extension, such as the "MX3-V" District, vehicle sales and rental display uses are prohibited pursuant to section 134-3.1.2 of this chapter.

The applicant is proposing to rezone the parcel to the "NX3" District. The Zoning Ordinance describes this district as "intended for a variety of heights of multiple-household buildings, including taller buildings, located along corridors and on the edges of neighborhoods." The applicable Building Types allowed in the "NX3" District include the General Building, Civic Building, Flat A and Flat B Buildings, and Row Building.

Staff believes that the proposed High Density Residential designation is appropriate for this site since it is in close proximity to the Southeast 14th Street corridor and is within a Neighborhood Node and a Regional Node, which allow a mix of uses and medium and higher density housing. Higher density residential uses would provide a transition from the more intensive commercial uses along the Southeast 14th Street corridor to the existing low density residential uses in the area. The site's proximity

to the existing retail, services and transit found along Southeast 14th Street support the proposal.

Should the applicant propose any future commercial use along the Southeast 14th Street frontage of the subject property, rezoning to a commercial mixed-use district would be required as the "NX3" District is a residential district. Furthermore, any future development beyond the current senior housing proposal will require a traffic impact analysis.

- 2. Large Scale Development Plan:** A Large-Scale Development Plan (LSDP) is required in accordance with Section 135-5.1 of the Municipal Code. The intent is to regulate large parcels or a combination of large parcels in a single development on an incremental basis to result in an overall system of walkable streets and blocks, smaller-scaled open spaces, and a mix of uses and building forms within the larger context of the area.

An LSDP was submitted with the proposed rezoning request and indicates a multi-phased project. The first phase of the project includes the development of a portion of the southwestern parcel for a 5-story multiple-household building and surface parking lot. Access to the proposed development site is off East Diehl Avenue. Other future vehicular access options are shown off East Kenyon Avenue and East Porter Avenue. The LSDP also lays out pedestrian connections along East Diehl Avenue to Southeast 14th Street and up to East Porter Avenue to the west of the site.

Development within future phases could be in the very long term future and the details are not included in the LSDP proposal. A future LSDP amendment may be required as any future phases are planned and to reflect other updates to the current development proposed within the LSDP.

- 3. Environmental History and Site Assessment:** The subject property was previously considered contaminated due to the operations of the former COTA Industries on the property adjoining the site where the Aldi's Grocery Store is currently located. The contamination was remediated by the Environmental Protection Agency (EPA) in the 1990s and staff has confirmed that the site is no longer being monitored by the Department of Natural Resources (DNR).

It is the responsibility of prospective property owners to conduct necessary due diligence including environmental testing before significant investment on a site based on its environmental history or historical activities of concern. The applicant has confirmed of being aware of the history of the subject site and have completed a Phase 1 Environmental Assessment during the purchase of the land. They are also aware of the potential need to use any other likely remediation given the history of this site.

- 4. Planning and Design Ordinance Requirements:** Any development must comply with all applicable site plan and design regulations of the City's Planning and Design

Ordinance. Should the rezoning be approved, the applicant would be required to prepare a Site Plan and building elevations for review before the property can be occupied by the proposed use.

III. STAFF RECOMMENDATION

Part A) Staff recommends that the requested "NX3" District be found not in conformance with the existing PlanDSM future land use designation of Community Mixed Use and Low Density Residential within a Neighborhood Node and a Regional Node.

Part B) Staff recommends approval of the request to amend the PlanDSM: Creating Our Tomorrow Comprehensive Plan to revise the future land use designation from Community Mixed Use and Low Density Residential within a Neighborhood Node and a Regional Node to High Density Residential within a Neighborhood Node and a Regional Node.

Part C) Staff recommends approval of the request to rezone the property from "N3a" Neighborhood District, "MX3-V" Mixed-Use District, and "MX3" Mixed-Use District, to "NX3" Neighborhood Mix District.

SUMMARY OF DISCUSSION

Sreyoshi Chakraborty presented the staff report and recommendation.

Carolyn Jenison asked for clarification that the Neighborhood Association was in support of the project, but the neighbors were not.

Sreyoshi Chakraborty stated that was correct. Comment cards were received from individual neighbors as well as a task force that represented the neighbors.

Jason Van Essen noted that it was not clear who the task force was, but they had provided a signed petition, and it is assumed there is overlap.

Chris Draper asked about the task force if it was a self-identified name or if they were represented.

Jason Van Essen stated that was their self-identified name.

Jane Rongerude questioned if we know anything about the membership or how they were formed. Are they simply in opposition.

Will Page commented about the site, noting that is very haphazard in the layout and wondered if there was information about why this was so poorly planned in the past.

Jason Van Essen noted that mostly that the land had never been developed after an industrial use factory had previously been located on the frontage along the Southeast 14th Street corridor.

Jane Rongerude agreed that it is just the nature of infill development.

Johnny Alcivar asked if there would be a traffic study done on the area.

Sreyoshi Chakraborty stated with the current plan only to develop the proposed 110-unit apartment building, it does not trigger a traffic study.

Jason Van Essen explained that any future development beyond the proposed apartment would require additional review, including a traffic study. He noted that if the applicant submits a large-scale development plan amendment and site plan for future phases, a traffic analysis would be required before additional development could proceed.

Johnny Alcivar asked if East Porter would be extended to Southeast 14th Street with the 110-unit proposal.

Jason Van Essen suggested to defer that question to the applicant.

Rick Trower questioned if it would be possible to rezone the parcels independently or in a less combined manner.

Jason Van Essen suggested that question be deferred to the applicant. Noted the applicant had submitted their application to rezone the entire site. It has been reviewed and processed in its entirety and staff is comfortable with it.

Sreyoshi Chakraborty noted that for the Southeast 14th Street parcel to be developed with a commercial use it would require a rezoning since the "NX3" district does not allow those types of uses.

Laura Kessel asked to review the Future Land Use Map and Comprehensive Plan for the area, noting that it appeared the property was affected by overlapping nodes and multiple future land use designations. She requested clarification on how those designations apply to the property.

Sreyoshi Chakraborty displayed the map and explained that the property's Future Land Use designation includes both Low-Density Residential and Commercial and Mixed Use, noting that the overlapping land use categories make the map somewhat difficult to interpret.

Jason Van Essen reminded the Commission that the Comprehensive Plan's nodes are intended to represent general planning concepts rather than fixed boundaries and should not be interpreted as having precise edges.

Sreyoshi Chakraborty clarified that the nodes overlap only on a portion of the subject property, rather than encompassing the entire site.

Jason Van Essen explained that the larger node to the south represents a regional node, while the smaller node represents a different scale of node. He noted that the overlapping nodes and their soft boundaries make it difficult to define a precise edge. The exact location of the boundary is open to interpretation.

Will Page asked if the parcels were owned by one title holder or if there are multiple title holders.

Sreyoshi Chakraborty stated there is one title holder.

Chris Draper left the meeting at 7:08pm

Dominic Anania asked if there was street parking available on East Diehl between Southeast 8th and Southeast 14th Street.

Sreyoshi Chakraborty stated there is on-street parking on the north side of the street, but not on the south.

Alexander Grgurich, 405 6th Ave, Des Moines, with Nelson Construction and Development introduced the development team and provided background on the company's history, noting 26 years of experience with multifamily, senior living, and commercial development projects in Des Moines and the Midwest. He stated that the company has owned two of the four parcels that comprise the site for approximately 8–10 years and recently acquired the remaining parcels, allowing the proposed multifamily development to move forward. He explained that the project is intended to address the need for senior housing and that the rezoning request is part of an application for low-income housing tax credits. He noted that the Neighborhood Association supports the project on the condition that it be age-restricted senior housing (55+), and they are voluntarily agreeing to include that zoning condition to ensure future phases or ownership changes cannot alter the agreement. He referenced neighborhood concerns regarding a nearby development where residents felt prior commitments to senior housing were not maintained and stated that the additional condition is intended to provide assurance. He explained that the goal is to complete the rezoning process, apply for tax credits, and begin construction if funding is awarded.

He stated that rezoning the entire site would allow for coordinated and responsible planning, rather than continued piecemeal development, and noted that the proposed zoning is less intensive than what is currently allowed on some of the site. He added that the development team held a neighborhood meeting, listened to concerns, and is voluntarily proposing additional conditions, including increasing the required setback from five (5) feet to 20 feet and doubling required landscaping materials to provide additional buffering for neighboring properties.

Leah Rudolphi asked for clarification regarding the proposed age restriction condition, specifically whether the restriction would only apply to developments utilizing low-income housing tax credits. She questioned whether the developer could build unrestricted market-rate housing on the site if low-income tax credits were not used.

Andrew Grgurich confirmed that while the project could proceed without low-income housing tax credits and potentially be developed as market-rate housing, they would be open to applying the age-restriction condition to market-rate units as well.

Will Page asked whether there are national or local statistics available regarding driving habits by age group that could help in estimating vehicle usage for the proposed 110-unit senior housing development. He noted that older residents may drive less frequently than younger residents and asked whether data could be provided to estimate the number of residents likely to be active drivers.

Alexander Grgurich explained that parking demand ratios vary significantly depending on location and project characteristics. He stated that the developers based the proposed parking ratio on their experience with senior living projects, including market-rate developments in Des Moines and other communities. They anticipate lower vehicle ownership among residents of this low-income senior housing project compared to their previous market-rate senior developments, although he did not have national statistics available.

Katie Gillette asked if the apartments would be one- or two-bedroom or anything bigger.

Alexander Grgurich confirmed that the project would include a mix of one-bedroom and two-bedroom units, with no units larger than two bedrooms.

He acknowledged that environmental concerns were an important topic raised during discussions. Stated that the development team has extensive experience working with contaminated sites and remediation requirements. Noted that moving forward with the project would require compliance with all applicable environmental remediation steps and oversight, providing assurance that environmental issues would be properly addressed. He emphasized if there were environmental concerns with the site, the best thing that could happen is this project.

Dominic Anania asked whether the proposed access road would include sidewalk connections providing pedestrian access to nearby destinations, including Aldi and the gas station.

Eric Cannon, 2727 SW Synder Boulevard, with Snyder & Associates, the project's civil engineer, stated the team attended the neighborhood meeting and addressed concerns raised by residents. Highlighted the benefits of the proposed senior housing development, including its proximity to an elementary school, potential opportunities for partnerships, nearby DART bus service, and access to nearby amenities such as a gas

station and grocery store. He emphasized that pedestrian and vehicle connectivity, including the extension of Porter Avenue and additional sidewalk connections, would be important components of the project and would benefit residents, families, and the surrounding community.

He explained that the proposed consolidated zoning approach is intended to provide a clear long-term vision for the site, with residential development planned throughout the property and no immediate commercial development proposed. Noted that any future retail use would require additional approvals and that development along East 14th Street would likely remain limited due to the site's constraints. He also addressed neighborhood concerns related to environmental issues, illegal dumping, and homelessness, stating that redevelopment would require adherence to environmental standards and ongoing site management.

He discussed the challenges of the site, including its irregular shape, approximately 40 feet of elevation change, utility limitations, and the need for phased development. Explained that sewer service is currently available to the south portion of the site, while future development to the north will require additional infrastructure planning. Noted that the project would meet required setbacks and that the developer's proposed conditions, including increased setbacks and additional landscaping, demonstrate a commitment to working with the neighborhood and the City.

CHAIRPERSON OPENED PUBLIC HEARING

Michelle Ogle Richelli, 920 Diehl Avenue, a longtime Diehl Avenue resident and member of the Jordan Task Force Group, introduced the neighborhood group and provided background on their history of involvement with local planning issues. She expressed concerns regarding the environmental history of the site and requested that additional environmental due diligence be completed before any rezoning approval.

She stated that the property remains listed as a contaminated site and referenced historical information regarding the former CODA Industries/CODA Drum site, including reports of underground drums, hazardous materials, and previous cleanup efforts. Questioned the extent of prior environmental assessments, including whether the Phase I environmental study covered the entire 12-acre property or only a portion of the site, and whether additional groundwater or subsurface investigations had been completed.

She referenced a 2009 report noting that groundwater assessments had not been completed and that potential subsurface contamination remained possible. Expressed concerns about potential impacts from future construction activities, including disturbance of contaminated materials, vapor concerns, and proximity to nearby residents and Lovejoy Elementary School. Requested that a more comprehensive environmental review be completed before moving forward with rezoning or development approval.

Jonathan Todhanter, 1006 East Diehl Avenue, resident of nearly 20 years, stated that he appreciates the close-knit nature of the neighborhood and does not oppose development of the property. However, he expressed opposition to the proposed rezoning, stating that a five-story apartment building does not fit or complement the surrounding residential neighborhood and nearby City facilities, including Lovejoy Elementary School. Stated that future development should be compatible with the existing character of the area.

He questioned whether covenant restrictions would be formally added to the property, noting that while the developer indicated a willingness to add conditions, he had not committed them to the property. Raised concerns about traffic impacts, stating that neighborhood traffic has increased over the years. Referenced past traffic concerns documented by the neighborhood, noting increases from approximately 1,997 vehicles in 1996 to 2,900 vehicles in 2009 and 3,210 vehicles in a 2016 traffic study. Noted concerns regarding truck traffic and previous issues related to nearby Menards expansions.

Laura Kessel asked regarding the source of existing truck traffic in the area and whether most of that traffic enters from Southeast 14th Street and turns onto the first access drive, based on the aerial view of the site.

Jonathan Todhunter stated that the majority of truck traffic comes from Menards and uses the access drive near Bowl-a-Rama. He noted that although a “no left turn” sign was installed, drivers often disregard it and use Deihl Avenue. He expressed ongoing concerns about increasing traffic volumes, congestion, and safety issues, stating that residents have experienced vehicle collisions, vehicles entering yards, and difficulty safely using the narrow two-lane roadway. He added that the traffic concerns have impacted neighborhood quality of life, including limiting children’s ability to play in front yards.

Amy Siemer, 921 East Diehl Avenue, a Des Moines Public Schools paraeducator and community member with a connection to Lovejoy Elementary, spoke as a concerned citizen and neighbor regarding the proposed rezoning and its potential impacts on the school. She clarified that her concern was not with senior housing itself, but with the long-term implications of permanently amending the Comprehensive Plan and rezoning approximately 12.36 acres adjacent to Lovejoy Elementary. She noted that zoning rights remain with the property regardless of future ownership or development changes, making the decision significant beyond the current proposal.

She emphasized the importance of considering public safety, transportation, school access, and long-term community planning. Asked whether a school impact analysis, traffic study addressing school arrival and dismissal times, pedestrian safety evaluation, and coordination with Des Moines Public Schools had been completed. Requested that any completed studies be shared with the Commission and public and questioned whether sufficient information was available if those evaluations had not been performed.

She also addressed discussions regarding potential partnerships between the proposed senior housing development and Lovejoy Elementary, stating that while intergenerational programs can provide benefits, such programs should be developed through collaboration with educators, school administrators, and families rather than being considered a benefit of the rezoning request. Emphasized that schools must plan years ahead for enrollment, staffing, transportation, emergency preparedness, and safe routes, and encouraged similar long-term consideration for decisions affecting the area around Lovejoy Elementary.

Chad Ogle Richelli, 920 East Diehl Avenue, a Diehl Avenue resident and member of the Jordan Task Force Group, thanked the Commission for their service and expressed concerns regarding the proposed rezoning and development. Questioned what changes have occurred to justify changing the PlanDSM Comprehensive Plan designation from low-density to high-density. Stated additional studies related to traffic, infrastructure, sewer capacity, and congestion should be completed before making that decision.

He stated that neighborhood traffic has significantly increased over the years due to additional commercial development in the area and expressed concern that existing conditions already create safety issues for residents. Acknowledged and appreciated the developer's proposed 20-foot buffer but questioned whether it would be sufficient given the scale of a five-story apartment building adjacent to existing homes.

He emphasized that residents are not opposed to development but questioned whether the proposed apartment complex is compatible with the surrounding neighborhood and Comprehensive Plan. He raised concerns about parking, vehicle impacts, and assumptions regarding senior residents' driving habits, noting that many residents age 55 and older still own vehicles and drive regularly.

He suggested that additional planning and studies are needed before approving the rezoning, including evaluating whether portions of the property should remain low-density residential. He stated that the Jordan Task Force Group represents approximately 40 residents who are seeking thoughtful planning, traffic analysis, and environmental review. Noted that redevelopment and environmental cleanup could be beneficial but questioned whether the apartment buildings could be relocated farther from existing homes or whether a larger buffer similar to Menards could be provided.

Theresa Doll, 1016 East Diehl Avenue, a resident whose property directly borders the proposed development, expressed concerns about traffic, noise, litter, and the impact of the proposed 55+ apartment development on the existing neighborhood. Questioned whether the proposed parking supply would be adequate, noting that many seniors continue to drive and that additional vehicles could affect surrounding streets. Stated she is not opposed to development but requested further study and consideration of impacts on neighbors and Lovejoy Elementary before moving forward.

Gabriela Davila, 816 East Diehl Avenue, shared concerns regarding the proposed development's impacts on neighborhood safety, traffic, emergency access, and loss of green space. Stated that she values the South Side community and is not opposed to development but questioned whether existing streets could adequately support the project, particularly emergency access for senior residents. Suggested that lower-density residential development or preservation of green space may be more compatible with the surrounding neighborhood.

Dakota Butrum, 810 East Diehl Avenue, stated that many concerns had already been addressed but emphasized concerns regarding site access. He questioned traffic impacts before the Porter Avenue extension is completed and noted his understanding that Porter would not connect to Southeast 14th Street. Expressed concern that traffic would continue to rely heavily on the Diehl Avenue access point and requested that access impacts receive additional consideration.

Allison Stuart, 1050 25th Street, a Drake neighborhood resident, spoke in support of taking additional time and care when considering development proposals. She referenced concerns with a previous Nelson Construction project in her neighborhood involving ongoing building maintenance issues and scaffolding. She encouraged the Commission to ensure that future developments are thoroughly reviewed, safely constructed, and provide a positive benefit to surrounding neighborhoods.

Cheryl Mills, 1010 East Diehl Avenue, stated traffic comes from Army Post Road, Southeast 14th, Southeast 5th, and Diehl Avenue gets it all.

Rebuttal

Eric Cannon addressed concerns regarding Lovejoy Elementary, traffic connectivity, and environmental review. He stated that senior housing would likely have less impact on elementary school demand due to resident demographics and noted that seniors are generally compatible neighbors regarding noise and activity levels.

He explained that Porter Avenue would be extended as part of the first phase of development to provide additional connectivity and noted that access would also be available through the existing connection toward Southeast 14th Street near Aldi. He acknowledged traffic concerns but stated that multiple connections would help distribute traffic rather than relying solely on Diehl Avenue. Stated that lenders would require thorough environmental review and remediation documentation before financing the project. Noted that the project would need to meet those requirements to secure funding, providing an additional level of oversight.

CHAIRPERSON CLOSED PUBLIC HEARING

COMMISSION ACTION

Jane Rongerude stated that the proposal represents an opportunity to redevelop a large, assembled site while expanding housing options for seniors. She acknowledged

the thoughtful concerns raised by neighborhood residents but also emphasized the needs of future residents and the benefits of providing opportunities for aging in place. Noted that the project includes infrastructure improvements such as sidewalks and new roads and stated that comprehensive planning for the entire site is preferable to piecemeal development. She expressed support for the request.

Todd Garner expressed support for the rezoning, stating that the future Porter Avenue connection should help reduce traffic on Diehl Avenue, while acknowledging concerns about cut-through traffic near Bowl-a-Rama and Menards. He viewed cleanup of the contaminated site as a positive outcome and supported adding more housing in Des Moines. Noted that rezoning is the first step in the development process and that details such as parking, setbacks, and site design would be addressed through subsequent review and coordination with City staff.

Will Page expressed support for the developer, stating that Nelson Construction has a strong track record of successful redevelopment projects in Des Moines. He noted that the proposed site presents significant development challenges and stated that the developer's experience and reputation are important factors to consider when evaluating the rezoning request.

Jane Rongerude added that many of the neighborhood's concerns could potentially be addressed through future site design, although those details are not available at the rezoning stage. She encouraged continued collaboration between the developer and neighborhood throughout the design process, expressing confidence that thoughtful design could help mitigate many of the concerns raised by residents.

Laura Kessel expressed support for the rezoning and commended neighborhood residents for their thoughtful participation in the public process. She noted that Comprehensive Plan decisions involve more than the land use map alone, emphasizing that the Plan's goals include providing diverse housing options and locating development near transit and services. Stated that these broader planning objectives, including supporting seniors with access to nearby amenities, are important considerations when evaluating land use and zoning changes.

Johnny Alcivar noted that, in addition to lender requirements, the low-income housing tax credit application process is highly detailed and includes review of environmental and other project considerations. Stated that many of the concerns raised by neighbors would continue to be evaluated and addressed as the project moves through the development process.

Rick Trower expressed that the proposed 55+ age restriction provided additional reassurance regarding the project, whether developed through low-income housing tax credits or as market-rate housing. He commended neighborhood residents for their participation and encouraged continued collaboration between the neighborhood and developer if the project moves forward. Suggested that continued dialogue could help address concerns, including whether portions of the site could incorporate lower-density

development. Requested that the 55+ age restriction commitment be clearly included in the record if the rezoning is approved.

Dominic Anania supported the project and the zoning but would like to see the three conditions discussed incorporated in any motion made.

Dominic Anania made motion for approval of the following:

Part A) The requested "NX3" District be found not in conformance with the existing PlanDSM future land use designation of Community Mixed Use and Low Density Residential within a Neighborhood Node and a Regional Node.

Part B) Amend the PlanDSM: Creating Our Tomorrow Comprehensive Plan to revise the future land use designation from Community Mixed Use and Low Density Residential within a Neighborhood Node and a Regional Node to High Density Residential within a Neighborhood Node and a Regional Node.

Part C) Rezone the property from "N3a" Neighborhood District, "MX3-V" Mixed-Use District, and "MX3" Mixed-Use District, to "NX3" Neighborhood Mix District with following conditions:

1. Any residential use shall be restricted to occupancy by persons age 55 and older.
2. A minimum 20-foot wide landscape buffer shall be provided along the southern perimeter of the site providing a transition for the adjoining residential properties in the vicinity of East Diehl Avenue.
3. Plantings shall be provided within the buffer required by condition #2 at twice (2x) the quantity/density required by the medium buffer standard found in Chapter 135 of the City Code.

Johnny Alcivar asked for clarification if the conditions only applied to Phase 1 or the entire site.

Alexander Grgurich agreed from audience to entire site.

Jason Van Essen noted that this would apply to any housing product.

Andrew Lorentzen asked if the conditions would apply to single-family homes if the developer were to construct some.

Jason Van Essen requested that this be clarified in the motion as the current form of the motion would apply to any residential use.

Dominic Anania stated that it was not his intent to have single-family housing be restricted to 55+.

Jason Van Essen asked if this would include duplexes or triplexes.

Rick Trower suggested just multi-family.

Dominic Anania restated the motion for approval of the following:

Part A) The requested "NX3" District be found not in conformance with the existing PlanDSM future land use designation of Community Mixed Use and Low Density Residential within a Neighborhood Node and a Regional Node.

Part B) Amend the PlanDSM: Creating Our Tomorrow Comprehensive Plan to revise the future land use designation from Community Mixed Use and Low Density Residential within a Neighborhood Node and a Regional Node to High Density Residential within a Neighborhood Node and a Regional Node.

Part C) Rezone the property from "N3a" Neighborhood District, "MX3-V" Mixed-Use District, and "MX3" Mixed-Use District, to "NX3" Neighborhood Mix District with following conditions:

4. Any residential use containing two (2) or more dwelling units shall be restricted to occupancy by persons age 55 and older.
5. A minimum 20-foot wide landscape buffer shall be provided along the southern perimeter of the site providing a transition for the adjoining residential properties in the vicinity of East Diehl Avenue.
6. Plantings shall be provided within the buffer required by condition #2 at twice (2x) the quantity/density required by the medium buffer standard found in Chapter 135 of the City Code.

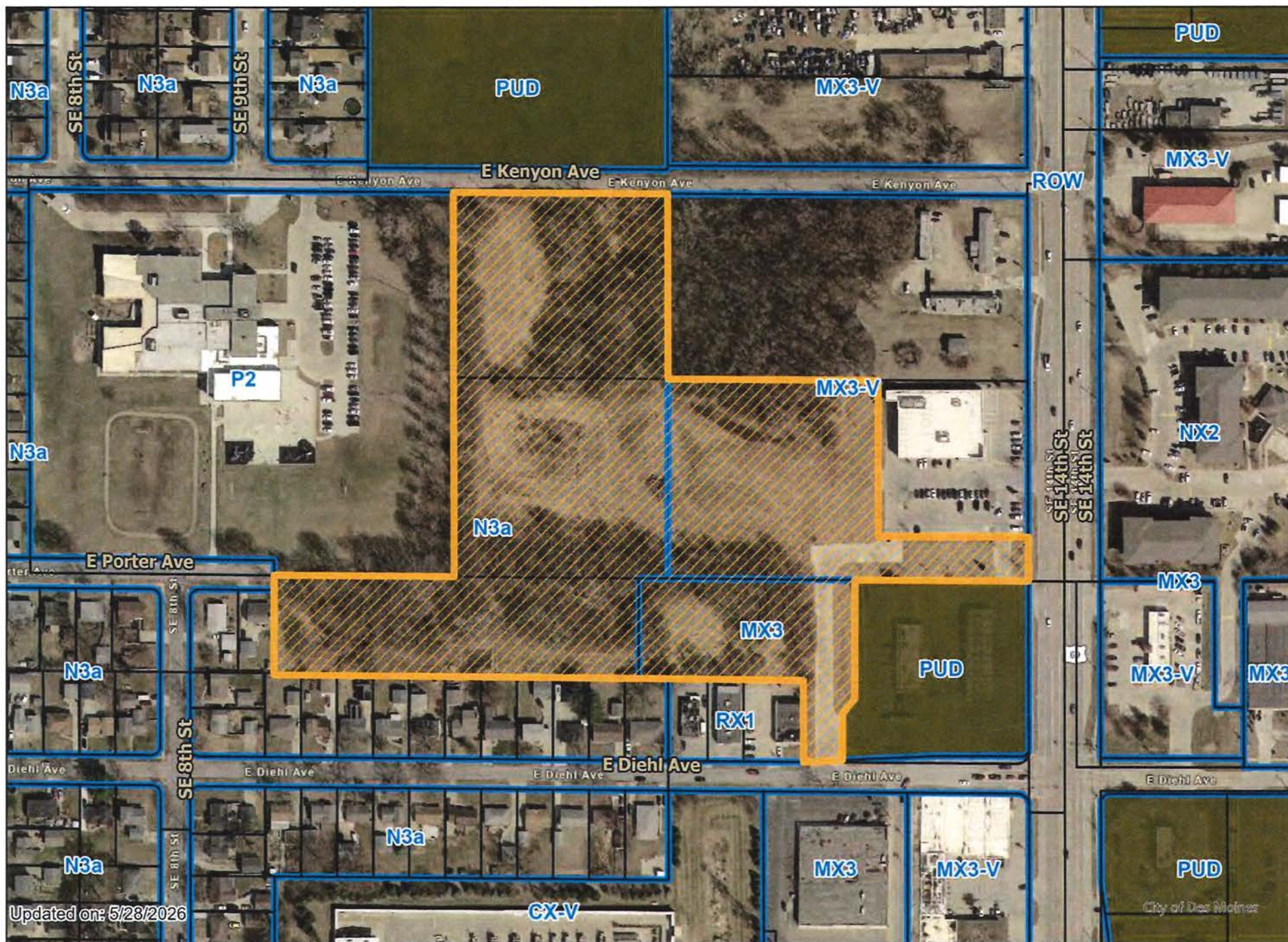
THE VOTE: 12-1 (Johnny Alcivar opposed and Chris Draper left the meeting)

Respectfully submitted,



Jason Van Essen, AICP
Planning & Urban Design Administrator

JMV:mrw



Phase 1 Cover

Legal Descriptions

THE NORTH 170 FEET (EXCEPT THE EAST 710 FEET) OF THE NORTHEAST $\frac{1}{4}$ OF THE SOUTHEAST $\frac{1}{4}$ OF SECTION 27, TOWNSHIP 78 NORTH, RANGE 24, WEST OF THE 5TH P.M., NOW INCLUDED IN AND FORMING A PART OF THE CITY OF DES MOINES, POLK COUNTY, IOWA.

PARCEL "H" BEING A PART OF LOT 2 IN BOWLARAMA PLACE, AN OFFICIAL PLAT, AND A PART OF THE NORTHEAST QUARTER (NE $\frac{1}{4}$) OF THE SOUTHEAST QUARTER (SE $\frac{1}{4}$) OF SECTION TWENTY-SEVEN (27), TOWNSHIP SEVENTY-EIGHT (78) NORTH, RANGE TWENTY-FOUR (24) WEST OF THE 5TH P.M., ALL NOW INCLUDED IN AND FORMING A PART OF THE CITY OF DES MOINES, POLK COUNTY, IOWA, AS SHOWN IN THE PLAT OF SURVEY RECORDED IN BOOK 13755 AT PAGE 292, IN THE OFFICE OF THE RECORDER OF POLK COUNTY, IOWA.

THE SOUTH 10 ACRES OF THE SOUTHEAST $\frac{1}{4}$ OF THE NORTHEAST $\frac{1}{4}$ (EXCEPT PARCEL 'I' OF THE PLAT OF SURVEY FILED IN THE OFFICE OF THE RECORDER OF POLK COUNTY, IOWA ON MARCH 28, 2013, AND RECORDED IN BOOK 14716 PAGE 881; AND EXCEPT THE WEST 300 FEET; AND LESS .40 ACRE FOR ROAD RIGHT-OF-WAY); AND THE NORTH $\frac{1}{2}$ OF THE SOUTHWEST $\frac{1}{4}$ OF THE SOUTHEAST $\frac{1}{4}$ OF THE NORTHEAST $\frac{1}{4}$ (EXCEPT THE WEST 300 FEET) ALL IN SECTION 27, TOWNSHIP 78 NORTH, RANGE 24 WEST OF THE 5TH P.M., NOW INCLUDED IN AND FORMING A PART OF THE CITY OF DES MOINES, IOWA.

OWNER:
NELSON CONSTRUCTION &
DEVELOPMENT
405 6TH AVE, STE 201
DES MOINES, IA, 50309
PHONE: (515) 457-9000
CONTACT: ALEXANDER
GRGURICH

ARCHITECT:
SLINGSHOT ARCHITECTURE
606 WALNUT ST, SUITE 1
DES MOINES, IOWA 50309
PHONE: (515) 243-0074
CONTACT: SCOTT HUFFMAN

1310 E DIEHL AVE.

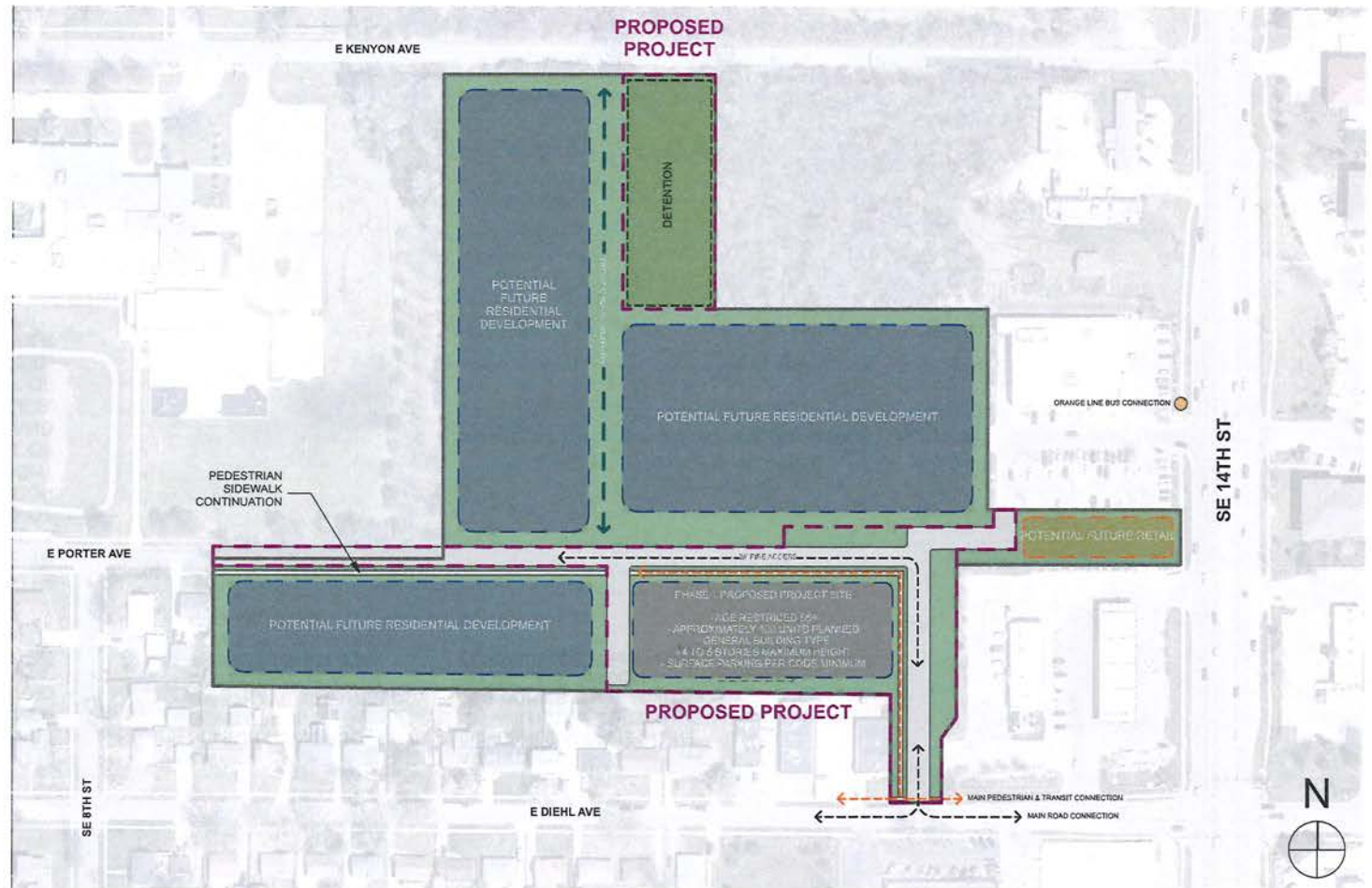
SITE PLAN

Vicinity Map



Legend

- PHASE 1 PROPOSED PROJECT SITE ———
- MAIN PEDESTRIAN AND TRANSIT CONNECTION ———>
- MAIN ROAD CONNECTION ———>
- ORANGE LINE BUS CONNECTION ●

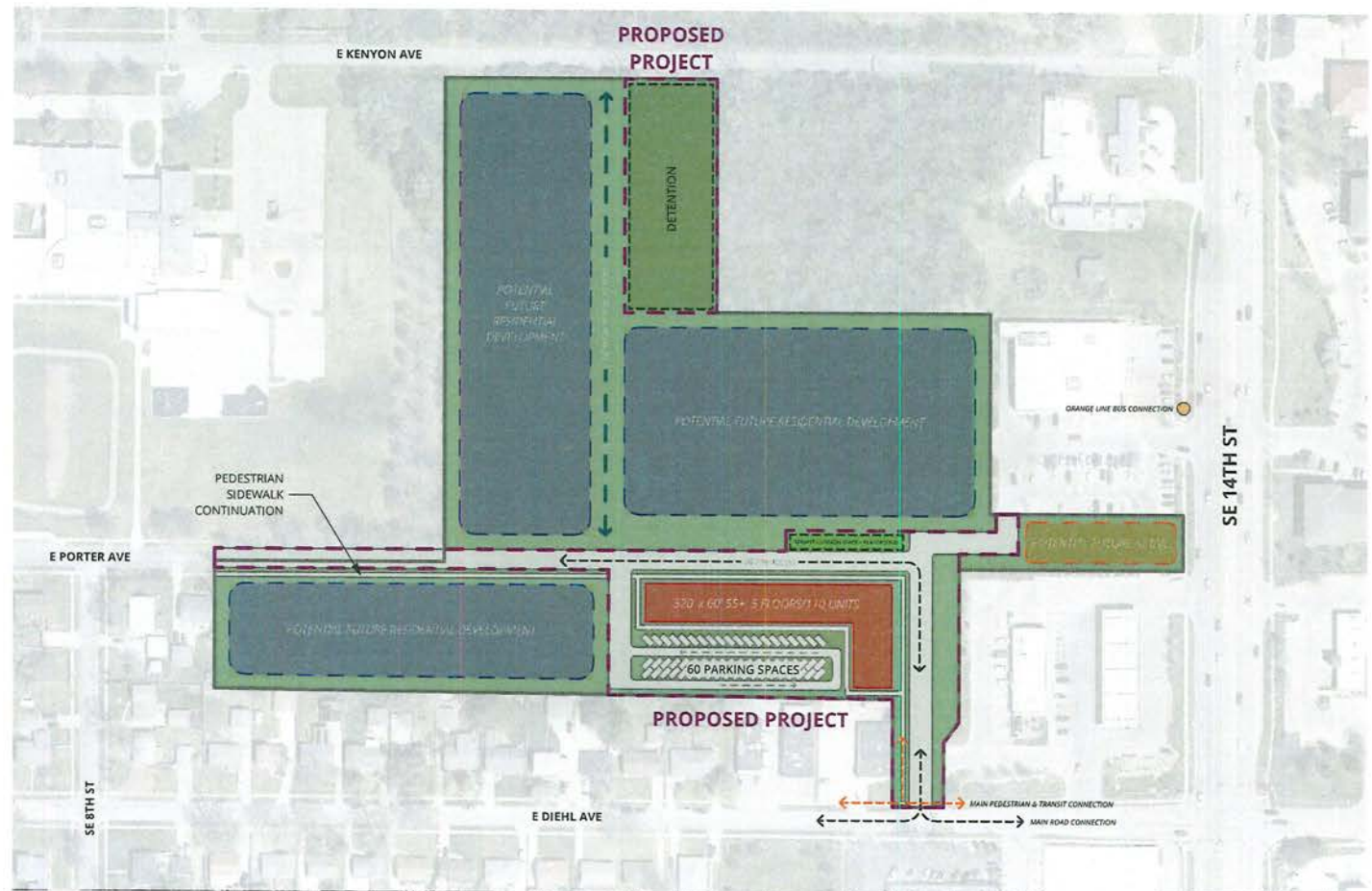


Scale: 1" = 200'

1310 E DIEHL AVE.

SITE PLAN

110 1 BEDROOM 55+ UNITS
1 BUILDING / 5 STORY MAX
.5 PARKING SPOTS REQUIRED PER UNIT
60 PARKING SPOTS - 55 REQUIRED



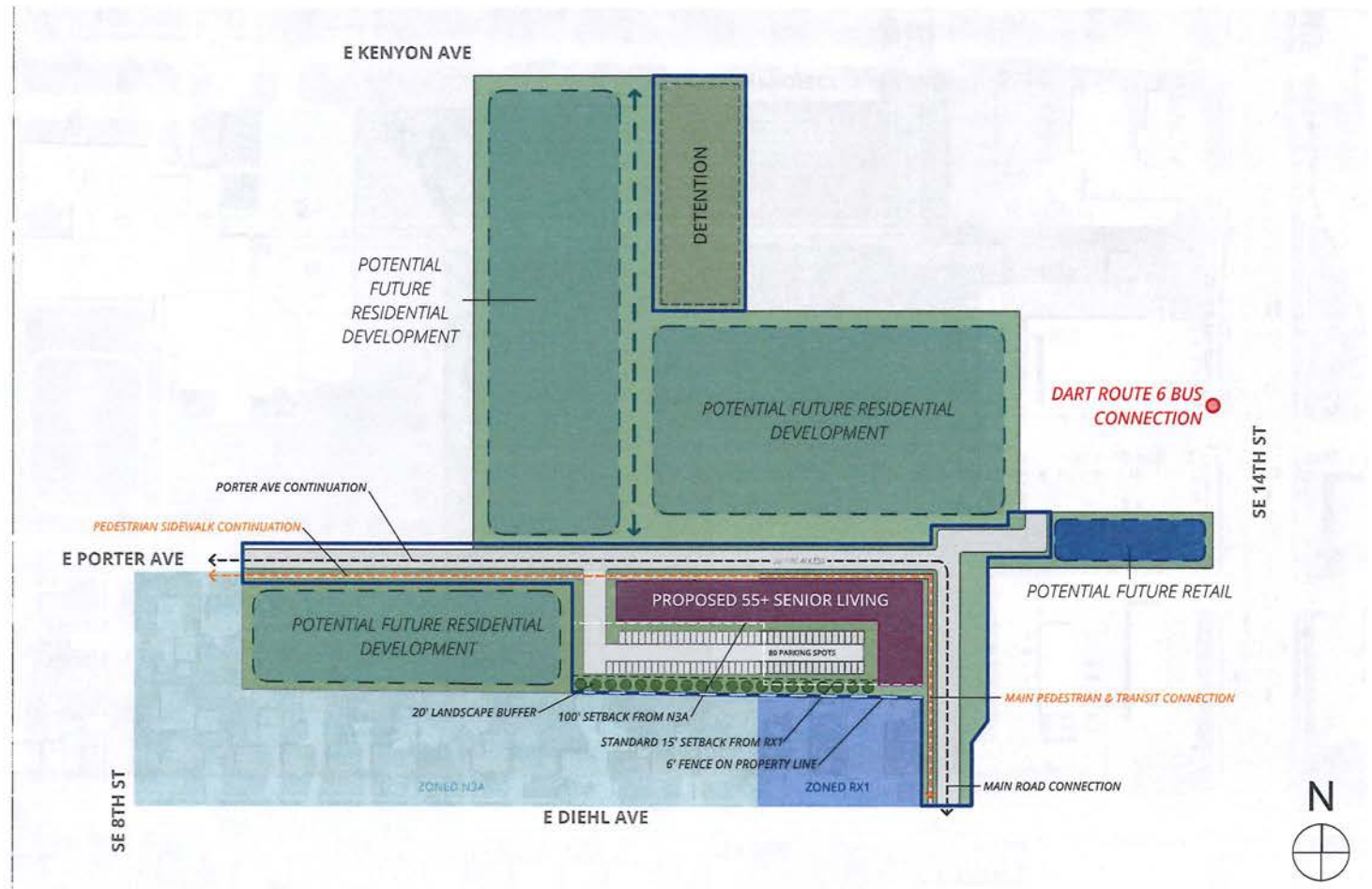
NELSON LIHTC

SITE DIAGRAM



Legend

- PHASE 1 PROPOSED PROJECT SITE —
- MAIN PEDESTRIAN AND TRANSIT CONNECTION ---
- MAIN ROAD CONNECTION ---
- DART ROUTE 6 BUS CONNECTION ●



Scale: 1" : 200'





















SLINGSHOT

ARCHITECTURE

2026.07.14

Sreyoshi Chakraborty
City of Des Moines
1200 Locust Street
Des Moines, Iowa 50309

RE: 1310 E. Diehl - Neighborhood Meeting

Dear Ms. Chakraborty

The following minutes are from the Neighborhood Meeting held on July 9th in regard to the proposed development at 1310 E. Diehl that is on the agenda for the July 16th Plan & Zoning meeting.

- The Neighborhood Meeting was held at Bowlerama Lanes, 1313 E. Diehl Ave, beginning at 6:00pm on Thursday, July 9th, 2026. The location was selected for its proximity to the proposed project site to allow easy access to neighbors of the site. To support flexibility in neighbor attendance, the meeting was held open house style allowing neighbors to come and go as needed.
- The meeting was attended by representatives of the Greater South Side Neighborhood Association (GSSNA), Councilman Gatto, as well as multiple neighbors who live immediately adjacent to the project site. The majority of the neighbors in attendance reside on properties that share a rear property line with the development site.
- The development team shared intent for the rezoning request including intent for the site to be age restricted 55+ housing. The development team also mentioned that the development is not pursuing the most dense zoning currently available on the site, MX3, but is rather requesting the site be rezoned to the less dense NX3 which will also restrict the future uses to residential and remove the possibility of unwanted commercial uses bordering the neighborhood in the future.
- The GSSNA indicated they met before the neighborhood meeting and expressed support of the housing and support of affordable housing at this site with the 55+ age restriction. GSSNA liked the connectivity of streets as presented with the idea to extend Porter through to help neighborhood circulation and school drop off/pick up at neighboring Lovejoy Elementary.
- Neighbors raised concerns of environmental factors due to potential contamination of the site from previous industrial operations. The development team described they will perform due diligence through purchase of property, city approvals and borings for construction on individual sites, of which GSSNA expressed agreement with.

SLINGSHOT

ARCHITECTURE

- Concern was expressed by neighbors whose yards are immediately adjacent to the site. Concerns included the height of buildings in the new development and people being able to look into their backyard as well as interference with their own view out the back of their property.
- Concern was expressed with added traffic in the neighborhood and referenced a traffic study conducted by the city in 2025. Per the pre-application meeting minutes, traffic impact analysis is not required for the currently proposed 55+ residential building, though a traffic impact analysis would likely be required for development beyond the proposed 55+ building. The development team will provide for a traffic study per city requirement for any future development beyond the initial 55+ building.
- Discussion was held on limited utility services from Porter for the immediate phase of the development. Future northern phases will require off site sanitary sewer extension.
- Significant discussion was centered around landscape buffers between the new development and adjacent single family housing. Neighbors referenced the nearby Menards site as a successful buffer example in the neighborhood. The development team indicated they will bring a potential concept to Plan and Zoning to address this concern.

Thank you,

Scott Huffman, AIA
Architect
Slingshot Architecture, Inc

From: [LISA ROSS](#)
To: [Chakraborty, Sreyoshi](#); [Planning](#); [Boesen, Connie S.](#); [Voss, Carl B.](#); [Simonson, Mike W.](#); [Gatto, Joe P.](#); [Westergaard, Linda C.](#); [Mandelbaum, Josh T.](#); [Barron, Rob X.](#); [LISA ROSS](#)
Subject: ZONG-2026-000013
Date: Monday, July 13, 2026 1:00:13 PM

EXTERNAL EMAIL - This email was sent by a person from outside your organization. Exercise caution when clicking links, opening attachments or taking further action, before validating its authenticity.

Dear Mayor, City Council Members, and Planning Staff,

My name is Lisa Stocker-Ross, and I am the President of the South Central Des Moines Neighborhood Association. I am writing to express our association's support for the zoning request involving multiple parcels located near 1310 East Diehl Avenue, provided that the development remains designated as **senior living (55+)** as part of the zoning requirements.

A group of residents identifying themselves as the Jordan Task Force has expressed concerns regarding this proposal. These residents live within the 200 feet. While we respect their opinions, this group is not affiliated with the South Central Des Moines Neighborhood Association.

Recently, a meeting was held between representatives of the Jordan Task Force, Nelson Construction Services, LLC (represented by Alexander Grgurich), Joe Gatto, and myself. The discussion was productive and demonstrated the developer's willingness to address neighborhood concerns and work collaboratively toward solutions.

Several concerns were raised during the meeting:

- **Senior Housing Requirement:** Residents expressed concern that the project could eventually become low-income rental housing similar to Melbourne Apartments. The developer stated that the property would be developed specifically as senior living and that this requirement would be incorporated into the zoning. Including a 55+ senior living requirement would help address this concern.
- **Traffic Impacts:** Concerns were raised regarding traffic on Diehl Avenue and near Lovejoy Elementary School. The developer indicated that Porter Avenue would be extended to provide access for residents of the senior living development. This improvement would:
 - Provide additional parking opportunities for parents during student pick-up times.
 - Help reduce traffic congestion on Diehl Avenue.
 - Allow residents traveling west to utilize the extended Porter Avenue, while those traveling east could access the development via the private drive near Maverik.
- **Environmental Cleanup:** The developer would be required to remediate any ground contamination as part of the project. This development presents an opportunity to

address longstanding environmental concerns and improve the condition of the site.

- **Buffering and Privacy:** Nearby residents expressed concerns regarding the proximity of the building and parking areas to their properties, as well as lighting and privacy impacts. The developer stated that fencing would be installed and that setbacks would exceed minimum requirements. The developer also expressed a willingness to continue working with adjacent property owners to address these concerns.

The South Central Des Moines Neighborhood Association supports this zoning request for the following reasons:

- The property has generated complaints regarding homeless encampments, and development would help address this issue.
- The site is frequently used as a dumping ground, with trash and debris regularly visible along Kenyon Avenue and from the private drive near Maverik and Aldi. Development would clean up and improve this area.
- The extension of Porter Avenue would help alleviate traffic concerns on Diehl Avenue and pick up for Lovejoy School.
- The project would increase property tax revenue for the City.
- Des Moines has a significant need for additional senior housing options.
- This development would be a positive addition to the community.
- The proximity of senior housing to Lovejoy Elementary School could create opportunities for intergenerational volunteer programs and community engagement, benefiting both students and seniors.
- The developer has demonstrated a willingness to compromise and work with residents, and we believe a cooperative approach from all parties is important to achieving a successful outcome.

The South Central Des Moines Neighborhood Association appreciates your time and consideration. We respectfully express our support for this zoning request and encourage its approval, provided that the 55+ senior living designation remains a condition of the zoning approval.

Sincerely,

Lisa Stocker-Ross

President

South Central Des Moines Neighborhood Association

Item: _____

Date: _____

Please mark one of the following:

- ☐ I support the request
☐ I am undecided
☒ I oppose the request

Staff Use Only

Titleholder Signature: _____

Name/Business: _____

Impacted Address: _____

Comments: _____

Comprehensive Nonconformant why?
School adjacency - Lovejoy Elementary
high density development next to homes
Lack of buffering
Less open space

ZONG-2026-000013

Item: _____ Date: 6/22/26

Please mark one of the following:

☐ I support the request

☐ I am undecided

☒ I oppose the request



Titleholder Signature: John Fravel

Name/Business: John Fravel

Impacted Address: 914 E Diehl Ave

Comments: _____

ZONG-2026-000013

Item:

Date:

6-20-26

Please mark one of the following:

☐ I support the request

☐ I am undecided

☒ I oppose the request

Staff Use Only
RECEIVED
DEVELOPMENT SERVICES
JUN 22 2026

Titleholder Signature:

Patricia Dale

Name/Business:

Impacted Address:

908 E. Diehl Ave

Comments:

I am opposed to all the additional cars that will be parked along the street. Since this is going to be a 5 story Apartment Bldg. People will be able to look right down into my yard and maybe even my house.

ZONG-2026-000013

Item: _____

Date: 6-9-2026

Please mark one of the following:

☐ I support the request

☐ I am undecided

☒ I oppose the request

Staff Use Only
RECEIVED
DEVELOPMENT SERVICES
JUN 17 2026

Titleholder Signature: _____

Name/Business: _____

Impacted Address: _____

1006 E Diehl ave Des Moines, Ia, 50315

Comments: _____

Too close to a grade school. Way too much
high density housing already in this area.

There is too much traffic on Diehl ave
already.

ZONG-2026-000013

Item: Rezone

Date: 6-18-26

Please mark one of the following:

☐ I support the request

☐ I am undecided

☒ I oppose the request

Staff Use Only
RECEIVED
DEVELOPMENT SERVICES
JUN 12 2026

Titleholder Signature: Bryant Ralston

Name/Business: _____

Impacted Address: 731 E. Porter

Comments: Traffic is already heavy here
(The backway to menards) we don't
need any more traffic! Big trucks
illegally cut thru here. Kids play
at the school playground all the time

ZONG-2026-000013

Item: _____

Date: 6/8/20

Please mark one of the following:

☒ I support the request

☐ I am undecided

☐ I oppose the request



Titleholder Signature: Lisa Stecker Ross

Name/Business: South Central DSM Neighborhood Assoc

Impacted Address: _____

Comments: As long as it is senior living
we are fine. We do not support low
rent - housing.

ZONG-2026-000013

Item: _____ Date: _____

Please mark one of the following:

☐ I support the request

☐ I am undecided

☒ I oppose the request

Staff Use Only

RECEIVED
DEVELOPMENT SERVICES

JUL 1 2026

Titleholder Signature: _____

Theresa A Doll

Name/Business: _____

Theresa A Doll

Impacted Address: _____

1016 E Dicht Ave, DSM IA 50315

Comments: _____

*increased noise & crime, increased traffic on Dicht
(an already too busy road because of Menards), increased parking
on our street - that should be a "no parking" street because
of the volume!*

lowered property value / higher homeowners insurance

ZONG-2026-000013

Item: _____ Date: June 29, 2026

Please mark one of the following:

☐ I support the request

☐ I am undecided

☒ I oppose the request

*Didn't get a
card first time
with letter.*

Staff Use Only
RECEIVED
DEVELOPMENT SERVICES
JUL 1 2026

Titleholder Signature: Cheryl D Mills

Name/Business: Same

Impacted Address: 1010 E Dick Ave

Comments: Des Moines, Ia 50315
Is this already a Done Deal?

We already have too much traffic on
Dick Ave. Do NOT want apartments
behind me. Cut off air flow, pollution
foot traffic. Frattish as renters don't respect
our area.

ZONG-2026-000013

Item: _____

Date: 4/27/2026

Please mark one of the following:

☐ I support the request

☐ I am undecided

☒ I oppose the request

Staff Use Only
RECEIVED
DEVELOPMENT SERVICES
JUL 6 2026

Titleholder Signature: _____

Name/Business: _____

Impacted Address: _____

Comments: _____

I will ~~be~~ be a first time mom and would like to keep my privacy to my family. I want my kids to be able to play happy & safe without the over-flow of cars and parking. This could cause slower emergency response if I would need 911.

ZONG-2026-000013

Item: _____

Date: 7-5-2026

Please mark one of the following:

☐ I support the request

☐ I am undecided

☒ I oppose the request

Staff Use Only
RECEIVED
DEVELOPMENT SERVICES
JUL 9 2026

Titleholder Signature: James F. Salk

Name/Business: _____

Impacted Address: 732 E DICKI AVE

Comments: DO NOT want this as I believe it will
lower property value and bring more traffic with
an increase in crime.

ZONG-2026-000013

Item: _____

Date: _____

Please mark one of the following:

☐ I support the request

☐ I am undecided

☒ I oppose the request

Staff Use Only

RECEIVED
DEVELOPMENT SERVICES

JUL 9 2026

Titleholder Signature: _____

Janet Bartlett

Name/Business: _____

Impacted Address: _____

1011 Hick-

Comments: _____

*Hick is like official speedway. No more
traffic needed!*

*Why would you build on a TOXIC
wast ground. You are too close to the
school to be a safe place for children.*

ZONG-2026-000013

Item: _____

Date: July 7, 2026

Please mark one of the following:

☐ I support the request

☐ I am undecided

☒ I oppose the request

Staff Use Only
RECEIVED
DEVELOPMENT SERVICES
JUL 14 2026

Titleholder Signature: Helen M Hutchinson

Name/Business: Helen Hutchinson

Impacted Address: 1007 E Dehl Ave Des Moines
IA 50315

Comments: I don't agree with anything about the
zone change!!! Dehl traffic is
awful already. Keep low density.

**Petition of Neighboring Property Owners and Residents
In Opposition to Comprehensive Plan Amendment and Rezoning
Application ZONG-2026-000013**

By signing below, we affirm that we are neighboring property owners or residents within the official notification area and respectfully request that our concerns be included as part of the public record.

PROPERTY OWNERS & RESIDENTS	IMPACTED ADDRESS	SIGNATURE
JONATHAN S TODHUNTER	1006 E DIEHL AVE DES MOINES IA 50315	X I OPPOSE THE REQUEST <i>CARDON FILE</i>
AMY TODHUNTER	1007 E DIEHL AVE DES MOINES IA 50315	X I OPPOSE THE REQUEST <i>can on file</i>
MIKEY TODHUNTER	1008 E DIEHL AVE DES MOINES IA 50315	X I OPPOSE THE REQUEST <i>can on file</i>
HELEN HUTCHISON	1007 E DIEHL AVE DES MOINES IA 50315	X I OPPOSE THE REQUEST <i>X Helen M Hutchison</i>
CHERYL D MILLS	1010 E DIEHL AVE DES MOINES IA 50315	X I OPPOSE THE REQUEST <i>CARDON FILE</i>
THERESA A DOLL	1016 E DIEHL AVE DES MOINES IA 50315	X I OPPOSE THE REQUEST <i>CARDON FILE</i>
MICHAEL BURNS 1001 E DIEHL AVE	308 WILMERS AVE DES MOINES IA 50315	X I OPPOSE THE REQUEST <i>Michael Burns</i>
STACEY BURNS 1001 E DIEHL AVE	308 WILMERS AVE DES MOINES IA 50315	X I OPPOSE THE REQUEST
JANET BARTELT 1011 E DIEHL	3506 SW 12TH PL DES MOINES IA 50315	X I OPPOSE THE REQUEST <i>CARDON FILE</i>
<i>NATT</i> MARK CHAPMAN	5603 SE 8TH ST DES MOINES IA 50315	X I OPPOSE THE REQUEST <i>X Matt Chapman</i>
FREDERICK J VILLALOBOS	5617 SE 8TH ST DES MOINES IA 50315	X I OPPOSE THE REQUEST
SUSAN VILLALOBOS	5617 SE 8TH ST DES MOINES IA 50315	X I OPPOSE THE REQUEST
<i>Zachary Peterson</i>	5621 SE 8TH ST DES MOINES IA 50315	X I OPPOSE THE REQUEST <i>Zachary Peterson</i>
KIKEO KENNY BACCAM	5703 SE 8TH ST DES MOINES IA 50315	X I OPPOSE THE REQUEST <i>X Kikeo Kenny Baccam</i>

NOI JACKIE BACCAM	5703 SE 8TH ST	DES MOINES IA 50315	X I OPPOSE THE REQUEST	<i>Noi Baccam</i>
BRYANT RALEIGH	731 E PORTER AVE	DES MOINES IA 50315	X I OPPOSE THE REQUEST	<i>CARD ON FILE</i>
REBECCA RALEIGH	731 E PORTER AVE	DES MOINES IA 50315	X I OPPOSE THE REQUEST	<i>CARD ON FILE</i>
JAMES SNELLER	732 E DIEHL AVE	DES MOINES IA 50315	X I OPPOSE THE REQUEST	<i>CARD ON FILE</i>
CHRISTINE SNELLER	732 E DIEHL AVE	DES MOINES IA 50315	X I OPPOSE THE REQUEST	<i>CARD ON FILE</i>
SOUAN LOVAN	805 E PORTER AVE	DES MOINES IA 50315	X I OPPOSE THE REQUEST	
DOUANGMALY LOVAN	806 E PORTER AVE	DES MOINES IA 50315	I OPPOSE THE REQUEST	
DAKOTA J BUTRUM	810 E DIEHL AVE	DES MOINES IA 50315	X I OPPOSE THE REQUEST	<i>Dakota J Butrum</i>
THOMAS F LUSE	811 E DIEHL AVE	DES MOINES IA 50315	X I OPPOSE THE REQUEST	
GABRIELLA DAVILA	816 E DIEHL AVE	DES MOINES IA 50315	X I OPPOSE THE REQUEST	<i>X Gabriel Davila CARD ON FILE</i>
MATTHEW DAVID CLELAND	902 E DIEHL AVE	DES MOINES IA 50315	X I OPPOSE THE REQUEST	<i>X Matthew Cleland CARD ON FILE</i>
PATRICIA JANE DALE	908 E DIEHL AVE	DES MOINES IA 50315	X I OPPOSE THE REQUEST	
JOHN P FRAVEL	914 E DIEHL AVE	DES MOINES IA 50315	X I OPPOSE THE REQUEST	<i>CARD ON FILE</i>
JANICE FRAVEL	914 E DIEHL AVE	DES MOINES IA 50315	X I OPPOSE THE REQUEST	<i>CARD ON FILE</i>
JAMAAL BEARD	915 E DIEHL AVE	DES MOINES IA 50315	X I OPPOSE THE REQUEST	<i>X Jamaal Beard</i>
CHAD L OGLE	920 E DIEHL AVE	DES MOINES IA 50315	X I OPPOSE THE REQUEST	<i>CARD ON FILE</i>
MICHELE OGLE RICCELLI	920 E DIEHL AVE	DES MOINES IA 50315	X I OPPOSE THE REQUEST	<i>Michele Ogle Riccelli</i>
AUTUMN OGLE RICCELLI	920 E DIEHL AVE	DES MOINES IA 50315	X I OPPOSE THE REQUEST	<i>Autumn Ogle Riccelli</i>
SCOT J SIEMER	921 E DIEHL AVE	DES MOINES IA 50315	X I OPPOSE THE REQUEST	<i>CARD ON FILE</i>

AMY SIEMER

921 E DIEHL AVE

DES MOINES IA 50315

X I OPPOSE THE REQUEST

X Amy Siemer

NICK SIEMER

921 E DIEHL AVE

DES MOINES IA 50315

X I OPPOSE THE REQUEST

X Nick Siemer

Lerly Diaz

903 E Diehl Ave

Des Moines IA

X 

← X

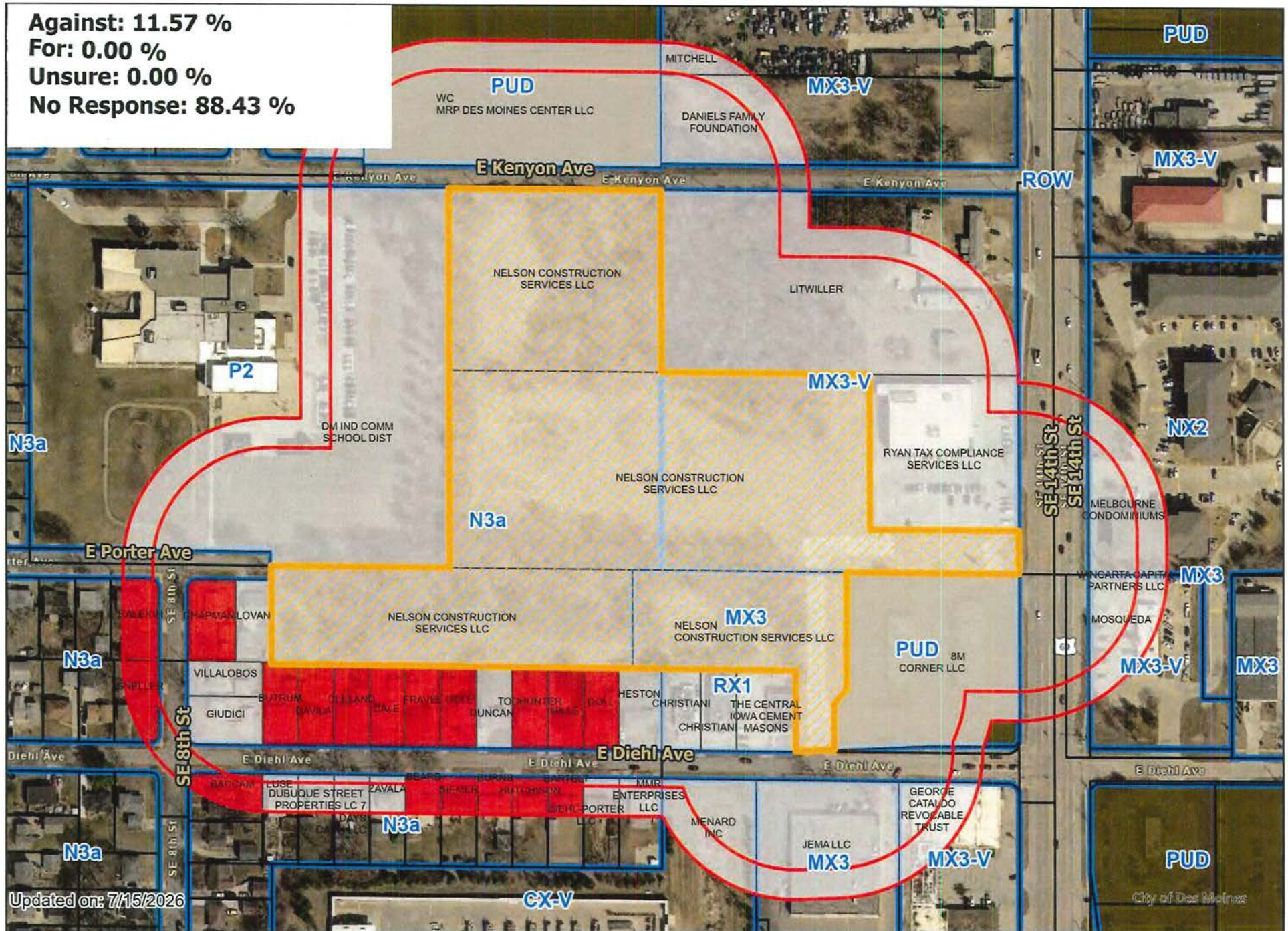
COMMENTS

We, the undersigned neighboring property owners and residents within the official notification area for Rezoning Application ZONG-2026-000013, respectfully oppose the proposed Comprehensive Plan Amendment and rezoning of approximately 12.36 acres from **Low Density Residential** to **High Density Residential**.

We respectfully believe the applicant has not demonstrated that the requested amendment is consistent with the long-term goals of PlanDSM or that the permanent increase in development intensity has been adequately evaluated with respect to transportation, traffic congestion, public safety, schools, infrastructure, neighborhood compatibility, and the general welfare.

Iowa Code § 414.3 provides that zoning regulations shall be made in accordance with a comprehensive plan and with reasonable consideration given to transportation, traffic congestion, public safety, schools, the prevention of overcrowding of land, the appropriate use of land, and the general welfare. We respectfully ask that these statutory planning principles guide the Commission's recommendation.

The signatures above represent neighboring property owners and residents who respectfully request that the Planning and Zoning Commission recommend **denial**, or alternatively **postpone action** on Comprehensive Plan Amendment and Rezoning Application ZONG-2026-000013 until the necessary planning studies, engineering analyses, and supporting information have been completed and made available for public review.



Phase 1 Cover

Legal Descriptions

THE NORTH 170 FEET (EXCEPT THE EAST 710 FEET) OF THE NORTHEAST ¼ OF THE SOUTHEAST ¼ OF SECTION 27, TOWNSHIP 78 NORTH, RANGE 24, WEST OF THE 5TH P.M., NOW INCLUDED IN AND FORMING A PART OF THE CITY OF DES MOINES, POLK COUNTY, IOWA.

OWNER:
NELSON CONSTRUCTION &
DEVELOPMENT
405 6TH AVE, STE 201
DES MOINES, IA, 50309
PHONE: (515) 457-9000
CONTACT: ALEXANDER
GRGURICH

ARCHITECT:
SLINGSHOT ARCHITECTURE
606 WALNUT ST, SUITE 1
DES MOINES, IOWA 50309
PHONE: (515) 243-0074
CONTACT: SCOTT HUFFMAN

PARCEL "H" BEING A PART OF LOT 2 IN BOWLARAMA PLACE, AN OFFICIAL PLAT, AND A PART OF THE NORTHEAST QUARTER (NE ¼) OF THE SOUTHEAST QUARTER (SE ¼) OF SECTION TWENTY-SEVEN (27), TOWNSHIP SEVENTY-EIGHT (78) NORTH, RANGE TWENTY-FOUR (24) WEST OF THE 5TH P.M., ALL NOW INCLUDED IN AND FORMING A PART OF THE CITY OF DES MOINES, POLK COUNTY, IOWA, AS SHOWN IN THE PLAT OF SURVEY RECORDED IN BOOK 13755 AT PAGE 292, IN THE OFFICE OF THE RECORDER OF POLK COUNTY, IOWA.

THE SOUTH 10 ACRES OF THE SOUTHEAST ¼ OF THE NORTHEAST ¼ (EXCEPT PARCEL 'I' OF THE PLAT OF SURVEY FILED IN THE OFFICE OF THE RECORDER OF POLK COUNTY, IOWA ON MARCH 28, 2013, AND RECORDED IN BOOK 14716 PAGE 881; AND EXCEPT THE WEST 300 FEET; AND LESS .40 ACRE FOR ROAD RIGHT-OF-WAY); AND THE NORTH ½ OF THE SOUTHWEST ¼ OF THE SOUTHEAST ¼ OF THE NORTHEAST ¼ (EXCEPT THE WEST 300 FEET) ALL IN SECTION 27, TOWNSHIP 78 NORTH, RANGE 24 WEST OF THE 5TH P.M., NOW INCLUDED IN AND FORMING A PART OF THE CITY OF DES MOINES, IOWA.

1310 E DIEHL AVE.

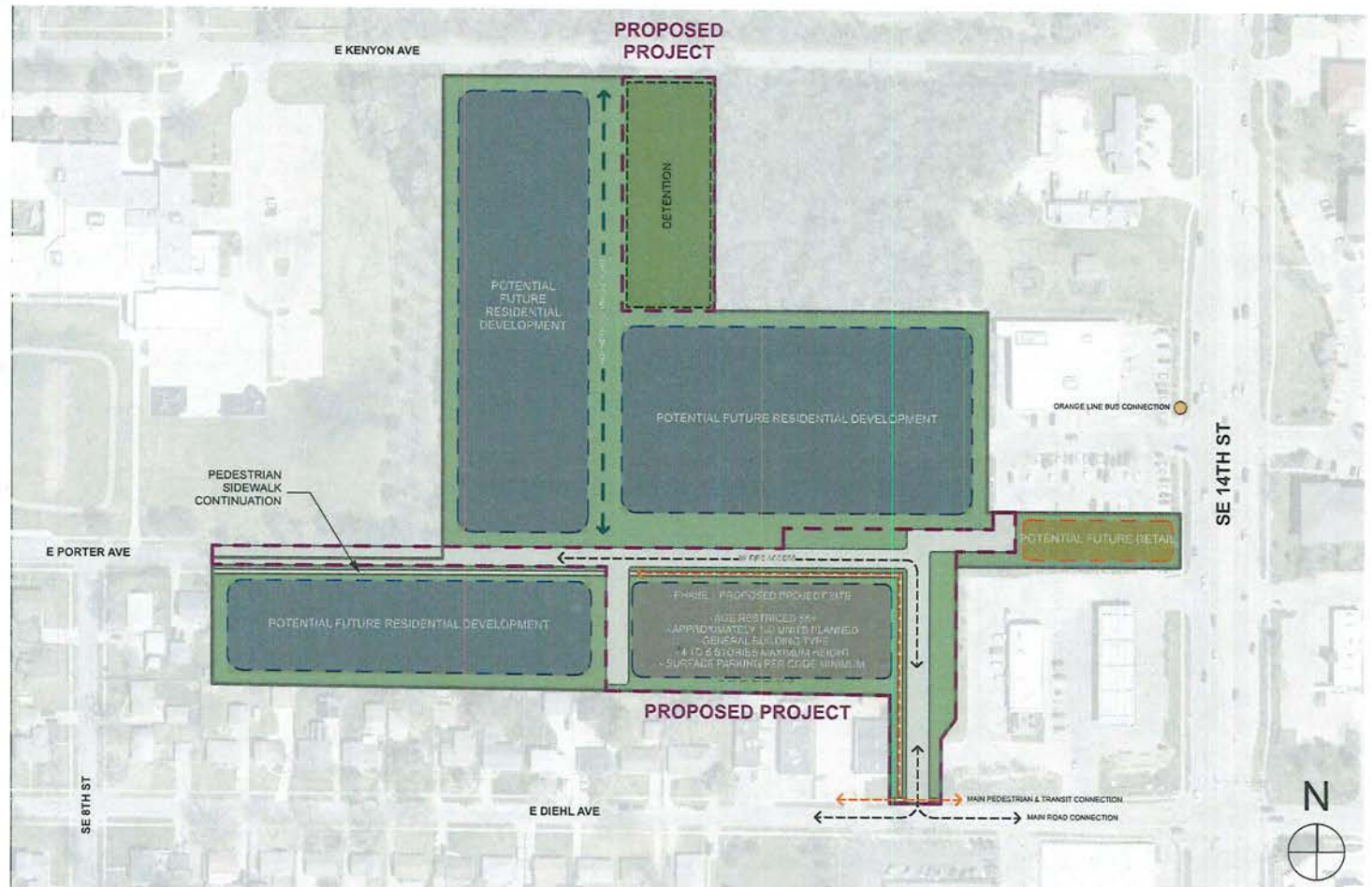
SITE PLAN

Vicinity Map



Legend

- PHASE 1 PROPOSED PROJECT SITE - - - - -
- MAIN PEDESTRIAN AND TRANSIT CONNECTION - - - - -
- MAIN ROAD CONNECTION - - - - -
- ORANGE LINE BUS CONNECTION ●

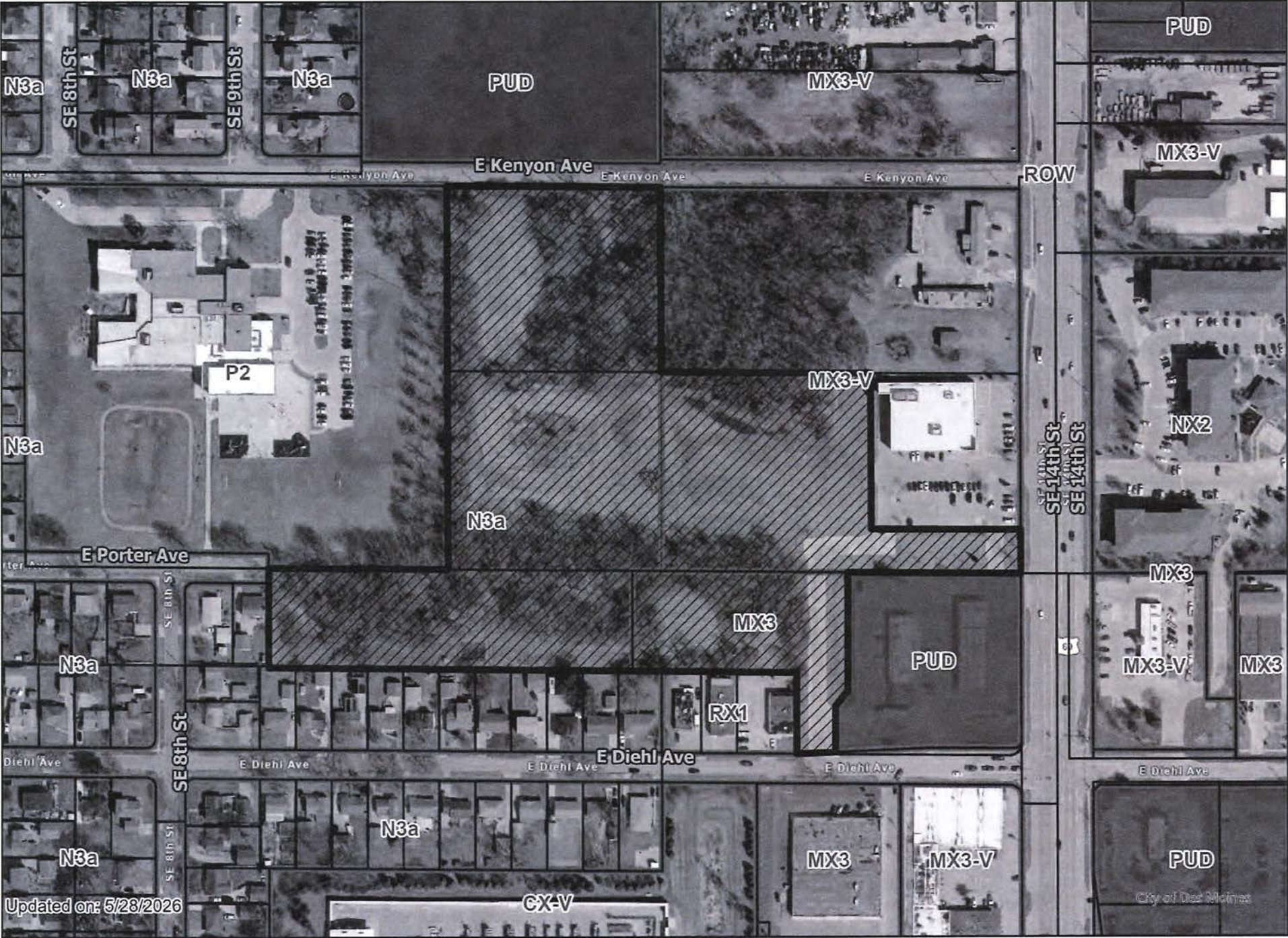


Scale: 1" : 200'

ONISHOT

URBANISM
ARCHITECTURE
INTERIORS

2026.06.11



From: thejordantaskforce@yahoo.com
To: [Chakraborty, Sreyoshi](#); [Planning](#)
Cc: [Barron, Rob X.](#); [Westergaard, Linda C.](#); [Mandelbaum, Josh T.](#); [Gatto, Joe P.](#); [Voss, Carl B.](#); [Simonson, Mike W.](#); [Boesen, Connie S.](#); [Jordan Task](#); stockerross@msn.com
Subject: Email 2 | ZONG-2026-000013 TRAFFIC | Opposition to Comprehensive Plan Amendment and Rezoning Request Vicinity of 1310 E. Diehl Avenue, 5510 SE 14th Street, 1001 E. Kenyon Avenue, and Parcel 12007207001000
Date: Tuesday, June 23, 2026 12:23:02 PM
Attachments: [2026.05.19 E14 - 1310 E DIEHL SITE PLAN v1.pdf](#)

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To the Plan and Zoning Commission and City Council:

We respectfully oppose the proposed Comprehensive Plan amendment and rezoning request identified as ZONG-2026-000013.

While the applicant has presented this proposal as an age-restricted senior housing development, the issue before the City is much broader than a single building. The applicant is requesting a Comprehensive Plan amendment from Low Density Residential to High Density Residential and a rezoning to NX3, creating permanent development rights that will remain with the property regardless of future ownership or future development plans.

We believe the City must carefully evaluate the long-term impacts of these changes on existing residents, neighborhood infrastructure, traffic, public safety, school safety, and community character. The decision before the City is not simply about one building, but about the future development rights that will be granted to the property and the lasting impacts those rights may have on the surrounding neighborhood.

TRAFFIC IMPACTS HAVE NOT BEEN ADEQUATELY ADDRESSED

One of our most significant concerns regarding this proposal is traffic.

The proposed development includes a five-story, 110-unit, age-restricted (55+) apartment building consisting primarily of one-bedroom units and only 60 parking spaces. In addition, the submitted site plan identifies future residential and retail development, as well as future roadway connections. The City should not evaluate this proposal solely on the initial apartment building but should instead assess the traffic impacts associated with the site's full build-out.

We have serious concerns about how traffic from this development will access and exit the property.

LACK OF DIRECT ACCESS TO SE 14TH STREET

The submitted site plan does not clearly identify a dedicated full-access entrance from the residential development directly onto SE 14th Street. Instead, it appears that traffic will rely on internal roadways connecting to Diehl Avenue, Kenyon Avenue, and

surrounding commercial access drives, including those serving Aldi, Maverik, Menards, and other nearby businesses.

SE 14th Street is a major arterial roadway specifically designed to accommodate significant traffic volumes. If this development lacks a dedicated direct-access connection to SE 14th Street, neighborhood streets may effectively become collector roads serving a high-density development.

We are concerned that future traffic may utilize:

- E. Diehl Avenue.
- E. Kenyon Avenue.
- Existing commercial access points.
- Nearby parking lots and drive aisles serving surrounding businesses.
- Internal roadways that ultimately funnel traffic into residential areas.

The City should require the applicant to clearly identify all proposed access points and demonstrate how traffic will safely enter and exit the development without burdening surrounding residential streets.

Based on existing conditions, we question whether Diehl Avenue was designed or intended to function as a collector street and whether it has sufficient capacity to accommodate the additional traffic generated by this development.

Important questions remain unanswered:

- Will the development have a full-access entrance directly onto SE 14th Street?
- If not, why is traffic being directed through neighborhood streets rather than directly to the arterial roadway designed to handle higher traffic volumes?
- Will traffic utilize existing commercial driveways and parking lot connections?
- Will improvements be required at the SE 14th Street and Kenyon Avenue intersection?
- Will sidewalks be installed along E. Kenyon Avenue?
- Will Diehl Avenue require widening?
- Will an additional traffic signal be required at the intersection of SE 14th Street and Kenyon Avenue?
- Has the City evaluated how future traffic will circulate throughout the entire development area?

FULL BUILD-OUT TRAFFIC IMPACTS HAVE NOT BEEN STUDIED

The current discussion focuses on a 110-unit senior apartment building. However, the submitted site plan also identifies future residential and retail development, as well as future internal roadways.

The rezoning request creates development rights for the entire property, not merely the initial apartment building.

We question whether any traffic analysis has been completed for the full build-out of the site.

Before approval is considered, the City should disclose:

- Whether a Traffic Impact Study has been completed.
- Whether future residential and retail phases were included in the analysis.
- Whether cumulative traffic impacts have been evaluated.

Without these answers, residents and decision-makers cannot accurately assess the proposal's true impact.

E. DIEHL AVENUE IS ALREADY HEAVILY UTILIZED

A major concern is the existing traffic volume on Diehl Avenue.

In approximately April 2009, Traffic Engineer Gary Fox discussed traffic conditions on Diehl Avenue before the Traffic Safety Committee. During that review, a four-day traffic study was conducted over the Easter holiday period.

The findings were significant:

- Traffic volumes on Diehl Avenue had more than doubled over the preceding years.
- Approximately 2,900 vehicles traveled Diehl Avenue within a 24-hour period.
- Average daily traffic equated to roughly two vehicles per minute.
- Peak periods exceeded 300 vehicles per hour, averaging approximately five vehicles per minute.

Importantly, those numbers are from approximately seventeen years ago.

At that time, many of the developments that exist today had not yet been constructed.

Since then, the area has experienced substantial growth, including:

- Expansion of Menards and its connection to Diehl Avenue.
- Aldi and its connection to Diehl Avenue.

- Maverik and its connection to Diehl Avenue.
- Starbucks.
- Tasty Tacos.
- Olive Garden.
- The Melbourne/Hubbell apartment development near Diehl Avenue and SE 14th Street.
- Additional commercial development along SE 14th Street.
- Continued residential growth throughout the surrounding area.

If traffic volumes were already a concern in 2009, it is reasonable to conclude that present-day traffic counts are substantially higher.

We therefore ask a simple question:

If traffic was already a concern before Aldi, Maverik, Starbucks, Olive Garden, the Melbourne/Hubbell apartment development, and additional commercial growth existed, why is the City considering a 110-unit high-density development today without first requiring updated traffic counts and a comprehensive Traffic Impact Study?

DIEHL AVENUE IS NOT DESIGNED TO FUNCTION AS A COLLECTOR STREET

Residents routinely observe school, commercial, and neighborhood traffic, delivery vehicles, and on-street parking along Diehl Avenue.

On evenings and weekends, parked vehicles often reduce the roadway's effective width, creating situations in which vehicles must yield to oncoming traffic. In some locations, the street effectively functions as a single lane.

We would like to know:

- Is Diehl Avenue classified as a collector street?
- Is Diehl Avenue wide enough to accommodate traffic generated by a five-story apartment building and future development?
- Will Diehl Avenue require widening and new sidewalks?
- Will additional traffic controls, turn lanes, or intersection improvements be necessary?
- Who will bear the cost of those improvements—the developer or taxpayers?

Until those questions are answered, the public cannot adequately evaluate the true cost and impact of this development.

SCHOOL SAFETY CONCERNS

Lovejoy Elementary School is located immediately adjacent to the proposed development area.

Many members of our group attended Lovejoy Elementary and have lived in this neighborhood for decades. Some families have lived in the area since the 1960s and 1970s.

The safety of school children should be one of the City's highest priorities.

Increased residential density creates additional:

- Vehicle trips.
- Turning movements.
- Delivery traffic.
- Service vehicle traffic.
- Visitor traffic.
- Construction traffic.

The City should require:

- A Traffic Impact Study.
- A School Safety Analysis.
- A Pedestrian Safety Study.
- Consultation with Des Moines Public Schools.

Approving a major increase in density adjacent to an elementary school without these studies would be premature.

PEDESTRIAN AND SIDEWALK CONCERNS

The applicant references pedestrian connectivity and sidewalk improvements; however, significant questions remain unanswered.

We would like to know:

- Does E. Kenyon Avenue currently have continuous sidewalks on both sides?
- Will sidewalks be installed throughout the entire development area?
- How will residents safely access public transit along SE 14th Street?

- How will school-age pedestrians safely navigate increased traffic volumes?

Without a complete pedestrian analysis, it is impossible to evaluate whether the development adequately protects public safety.

PARKING DEFICIENCIES

The site plan proposes only 60 parking spaces for 110 1-bedroom 55+ units.

Even if the project is age-restricted, parking demand will still be generated by:

- Residents.
- Family members.
- Visitors.
- Caregivers.
- Home health providers.
- Maintenance personnel.
- Delivery services.

If parking demand exceeds expectations, overflow parking may spill onto surrounding residential streets, further impacting Diehl Avenue and neighboring homes.

CONCLUSION

The issue is not whether development should occur. The issue is whether the City should amend its Comprehensive Plan and approve high-density zoning before obtaining updated traffic counts, a comprehensive Traffic Impact Study, a School Safety Analysis, a Pedestrian Safety Study, and a full evaluation of the ultimate build-out shown on the site plan.

This application seeks both a Comprehensive Plan amendment and a rezoning because the current Comprehensive Plan does not support the proposed density. The applicant has not demonstrated that the surrounding streets, intersections, sidewalks, schools, and infrastructure can safely accommodate the increased density being proposed.

Before any approval is considered, we respectfully request that the City require:

- Updated traffic counts.
- A comprehensive Traffic Impact Study.
- A School Safety Analysis.
- A Pedestrian Safety Study.

- Infrastructure and roadway capacity evaluations.
- Analysis of the full build-out of all future residential and commercial phases shown on the site plan.

Until these studies are completed and made available to the public, approval of ZONG-2026-000013 would be premature.

For these reasons, we respectfully request denial of the proposed Comprehensive Plan amendment and rezoning request.

Respectfully submitted,

Jordan Task Force Group

On behalf of neighboring residents and property owners affected by ZONG-2026-000013

From: thejordantaskforce@yahoo.com
To: [Planning; Chakraborty, Sreyoshi; Barron, Rob X.; Westergaard, Linda C.; Mandelbaum, Josh T.; Gatto, Joe P.; Voss, Carl B.; Simonson, Mike W.; Boesen, Connie S.](#)
Cc: [Jordan Task](#)
Subject: EMAIL 3 || Request for Response Regarding Comprehensive Plan Amendment and Rezoning Application ZONG-2026-000013
Date: Wednesday, June 24, 2026 1:40:05 PM

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TO THE PLAN AND ZONING COMMISSION AND CITY COUNCIL

Good afternoon,

When you have a moment, we respectfully request a response to the following matter.

We oppose the requested Comprehensive Plan amendment and associated rezoning application identified as ZONG-2026-000013.

While much of the discussion surrounding this proposal has focused on the proposed senior housing development, we believe the most significant issue before the City is the request to amend the City's adopted Comprehensive Plan, PlanDSM.

The applicant requests that the future land use designation be changed from Low Density Residential to High Density Residential to accommodate the proposed development. This request raises important planning, policy, and public-interest concerns that extend well beyond a single project.

THE MOST IMPORTANT QUESTION BEFORE THE CITY

Before considering any Comprehensive Plan amendment, we believe the City must answer one fundamental question:

What has changed since the adoption of PlanDSM that justifies redesignating this property from Low Density Residential to High Density Residential?

This question goes to the very heart of this application.

PlanDSM serves as the City's adopted policy framework for future growth and development. The purpose of the Comprehensive Plan is to provide consistency, predictability, transparency, and stability in land use decisions while balancing the interests of current and future residents.

Residents make decisions about where to live, invest, purchase homes, and raise their families based in part upon the expectations established by the City's adopted plans and policies. Those plans should not be changed lightly.

If the City determines that the existing Low Density Residential designation is no longer appropriate, then the public deserves a clear explanation supported by facts, studies, planning principles, and adopted Comprehensive Plan policies.

To date, we have not seen evidence demonstrating:

- That the original land use designation was made in error.
- That significant conditions have changed since the adoption of PlanDSM.
- That the existing Low Density Residential designation has become obsolete.
- That the proposed High Density Residential designation better serves the surrounding neighborhood.
- That the public benefit outweighs the impacts on existing residents and neighborhood character.
- That the amendment advances the broader goals of PlanDSM beyond accommodating a single development proposal.

The burden should not be on nearby residents to prove why the Comprehensive Plan should remain unchanged. Rather, the burden should be on the applicant to demonstrate why the City's adopted policy should be amended.

PLANDSM AND THE BURDEN OF JUSTIFICATION

PlanDSM exists to guide future development decisions and establish clear expectations regarding land use throughout the City. It serves as the foundation for zoning decisions and helps prevent piecemeal land-use changes driven by individual development proposals.

When a property owner requests a Comprehensive Plan amendment, the question should not be whether a particular project appears desirable or whether a development can physically fit on a site. The question should be whether there is a legitimate planning basis to alter the City's adopted long-range vision for that property.

Before approving this amendment, the City should clearly identify:

- What specific conditions have materially changed since PlanDSM was adopted.
- Whether new information, infrastructure improvements, planning studies, or community needs support a different land use designation.
- Why the existing Low Density Residential designation no longer serves the public interest.
- How the proposed amendment advances the goals and policies contained within PlanDSM.

- How the amendment benefits the broader community as a whole.
- Why is the amendment necessary beyond accommodating a single development proposal?

Absent such findings, approval of the amendment would appear to be driven primarily by the proposed project rather than by a demonstrated need to revise the City's long-range planning policy.

The Comprehensive Plan should guide development.

Development should not dictate changes to the Comprehensive Plan.

If land-use designations are routinely changed whenever a proposed project conflicts with the Comprehensive Plan, then the plan ceases to function as a meaningful planning document and instead becomes reactive to individual development proposals.

NEIGHBORHOOD COMPATIBILITY

The surrounding area continues to consist primarily of established single-family residential neighborhoods, Lovejoy Elementary School, neighborhood-serving uses, and lower-density development patterns.

The proposed amendment would significantly alter the long-term land-use expectations for this property and create development rights that extend well beyond the current proposal.

While the applicant currently proposes age-restricted senior housing, the City is not merely approving a building. The City is being asked to approve a Comprehensive Plan amendment and associated zoning changes that will remain with the property regardless of future ownership, future developers, or future market conditions.

These decisions have consequences that may affect the neighborhood for decades.

LONG-TERM PUBLIC INTEREST

The question before the City should not be whether this particular project can be designed to fit on the site.

The question should be whether changing the City's long-term land-use policy serves the broader public interest.

Before approving any amendment, the City should clearly identify:

- What specific conditions have changed since adoption of PlanDSM.
- Why the existing Low Density Residential designation is no longer appropriate.
- How the proposed High Density Residential designation advances the goals and

policies of PlanDSM.

- How the amendment benefits the public as a whole.
- Why the amendment is necessary beyond accommodating a single development proposal.

Absent clear and compelling answers to these questions, we believe approval of the requested Comprehensive Plan amendment would be inconsistent with sound planning principles and would undermine the purpose of the City's long-range planning process.

CONCLUSION

As residents, property owners, taxpayers, and stakeholders in this community, we respectfully ask the Plan and Zoning Commission and City Council to carefully consider the long-term implications of changing the City's adopted Comprehensive Plan.

We respectfully request a written response identifying the specific facts, studies, changed conditions, infrastructure improvements, planning analyses, or public benefits that support changing the future land-use designation of this property from Low Density Residential to High Density Residential.

If this property was appropriately designated Low Density Residential when PlanDSM was adopted, the public deserves a clear explanation of what has changed and why a different designation is now warranted.

If that question cannot be clearly answered and supported by evidence, then we respectfully submit that the requested Comprehensive Plan amendment should be denied.

The integrity of PlanDSM depends upon the consistent application of its policies and land-use framework. Amendments should be based upon demonstrated planning needs and substantial public benefit—not simply because a proposed development is inconsistent with the existing plan.

For these reasons, we respectfully request that the Plan and Zoning Commission recommend denial of the requested Comprehensive Plan amendment and associated rezoning application, and that the City Council deny the application should it come before them for consideration.

Respectfully submitted,

Jordan Task Force Group

On behalf of neighboring residents and property owners affected by ZONG-2026-000013

WE OPPOSE ZONG-2026-000013

LOVAN, SOUAN 805 E PORTER AVE
CHAPMAN, MATTHEW 5603 SE 8TH ST
RALEIGH, REBECCA 731 E PORTER AVE
SNELLER, JAMES & CHRISTINE 732 E DIEHL AVE
TIMM, THERESA 731 E DIEHL AVE
VILLALOBOS, FREDERICK 5617 SE 8TH ST
BUTRUM, DAKOTA J 810 E DIEHL AVE
DAVILA, GABRIELLA 816 E DIEHL AVE
CLELAND, MATTHEW DAVID 902 E DIEHL AVE
DALE, PATRICIA J 908 E DIEHL AVE
FRAVEL, JOHN P 914 E DIEHL AVE
OGLE-RICCELLI, CHAD & MICHELE 920 E DIEHL AVE
TODHUNTER, JONATHAN & AMY 1006 E DIEHL AVE
MILLS, CHERYL D 1010 E DIEHL AVE
DOLL, THERESA 1016 E DIEHL AVE
BARTELT, JANET 1011 E DIEHL AVE
HUTCHISON, HELEN 1007 E DIEHL AVE
MENNINGA, LINDA 1007 E DIEHL AVE
BURNS, MICHAEL 1001 E DIEHL AVE
SIEMER, SCOT & AMY 921 E DIEHL AVE
BEARD, JAMAAL 915 E DIEHL AVE
BACCAM, KIKEO KENNY & JACKIE 5703 SE 8TH ST
KLITZKE, RICK 728 E DIEHL AVE
FIERRO, SHELIA 5621 SE 8TH ST

From: thejordantaskforce@yahoo.com
To: [Planning; Chakraborty, Sreyoshi; Barron, Rob X.; Westergaard, Linda C.; Mandelbaum, Josh T.; Gatto, Joe P.; Voss, Carl B.; Simonson, Mike W.; Boesen, Connie S.](#)
Cc: [Jordan Task](#)
Subject: EMAIL 4 || Rezoning Application ZONG-2026-000013 | Request for Consideration of Publicly Available Environmental Records as Part of the Official Record
Date: Tuesday, June 30, 2026 2:24:40 PM
Attachments: [Exhibit A – Iowa Department of Natural Resources USER Site Information Report \(2009\) \(CON 12-15, Doc. #20342\).pdf](#)
[Exhibit B – IDNR EPA Investigation File documenting the 1991–1992 environmental investigation, hazardous waste disposal, buried drums, contaminant migration, and laboratory findings..pdf](#)
[Exhibit C – IDNR Follow-Up Investigation Report recommending groundwater sampling, removal of buried drums, and additional remediation.pdf](#)
[Exhibit D – Historical IDNREPA Site Maps, Sampling Locations, and Investigation Photographs.pdf](#)
[Exhibit E – Historical Environmental Timeline of the Former COTA Industries Property.pdf](#)
[Exhibit F – Current Concept Plan and Rezoning Site Plan.pdf](#)

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Dear Chair and Members of the Planning and Zoning Commission:

On behalf of the Jordan Task Force Group and neighboring residents and property owners, thank you for your time and consideration of Rezoning Application ZONG-2026-000013.

We respectfully submit this letter and the attached exhibits to assist the Commission in its review of this application. The purpose of this correspondence is **not** to ask the Commission to determine environmental liability, regulatory compliance, or the current environmental condition of the property. Rather, our purpose is to ensure that the Commission's decision is informed by the publicly available environmental history of the property, including documented findings of the Iowa Department of Natural Resources (IDNR) and the United States Environmental Protection Agency (EPA), and to respectfully request that these publicly available records be included in the official record before permanent amendments to the Comprehensive Plan and zoning designation are approved.

The rezoning request before the Commission would permanently amend the City's Comprehensive Plan and change the zoning designation of property historically occupied by COTA Industries to permit substantially more intensive residential development. Once granted, those land use rights remain with the property regardless of future ownership or future development proposals. Because of the long-term significance of this decision, we respectfully believe the Commission should have the benefit of reviewing the documented environmental history associated with the property.

DOCUMENTED ENVIRONMENTAL HISTORY

Public records establish that COTA Industries operated paint manufacturing and coating operations on the property beginning in the 1950s. Historical operations

involved paint formulation, industrial solvents, chemical storage, waste handling, and drum disposal associated with manufacturing activities. State and federal environmental investigations later documented approximately three decades of historical industrial waste disposal before formal investigations began in 1991.

Beginning in 1991, the Iowa Department of Natural Resources (IDNR) and the United States Environmental Protection Agency (EPA) initiated extensive investigations into historical waste disposal activities at the site. These investigations included geophysical surveys, exploratory trenching, excavation of suspected disposal areas, soil sampling, waste characterization, laboratory analyses, and site mapping.

The investigation records document the discovery of buried drums, deteriorated containers, hazardous sludges, paint wastes, and hazardous substances associated with historical manufacturing operations. Laboratory analyses identified contaminants including heavy metals, paint-related solvents, volatile organic compounds, and other industrial chemicals. Investigators further concluded that hazardous substances had been released into the environment and documented evidence of contaminant migration from disposal areas.

FOLLOW-UP INVESTIGATION

Following the initial investigation, the IDNR submitted an additional investigative report to the Iowa Attorney General documenting recommended corrective actions. Those recommendations included:

- Removal of visible contamination;
- Defining and remediating contaminated areas;
- Excavation and proper disposal of buried drums and wastes;
- Follow-up sampling of disposal areas; and
- Groundwater sampling.

These recommendations demonstrate that state regulators believed additional environmental investigation and remediation were necessary following the initial investigation.

THE 2009 IDNR USER SITE INFORMATION REPORT

Perhaps the most significant document attached is the Iowa Department of Natural Resources **USER Site Information Report** (CON 12-15, Doc. #20342), issued in 2009. This report serves as the State's summary of the environmental history associated with the former COTA Industries property and identifies an approximately **10-acre** site with documented historical contamination and investigation activities.

Most importantly, the report states:

"However, there has been no groundwater assessment and it is possible there may be significant subsurface contamination with paint solvents. Drum

disposal areas remain in place."

The report further identifies **areas potentially impacted by the site**, indicating that evidence of contamination was not necessarily limited to the primary disposal locations. These observations are contained within the State's own environmental records and demonstrate that important environmental questions remained unresolved as of the IDNR's most recent summary report.

The Commission is not being asked to resolve these environmental questions. Rather, we respectfully request that the documented public record be considered as part of the Commission's evaluation of this rezoning request.

WHY THIS INFORMATION MATTERS

We recognize that the Planning and Zoning Commission is not the agency responsible for environmental regulation. Nevertheless, the Commission is responsible for making recommendations regarding permanent land use decisions that affect surrounding neighborhoods and future development.

The attached records are relevant because they provide important historical context regarding the property's prior industrial use, documented hazardous waste investigations, and unresolved environmental issues identified within the public record. These are matters that we believe should be considered as part of the Commission's overall due diligence before recommending permanent changes to the Comprehensive Plan and zoning designation.

This information is particularly important because the proposed development includes approximately **110 residential units** together with areas identified for future residential and commercial development. Future residents, neighboring property owners, elected officials, and decision-makers deserve a complete understanding of the documented environmental history associated with this property.

PURPOSE OF THE ATTACHED EXHIBITS

For the Commission's convenience, **Exhibit E** provides a concise historical timeline summarizing the publicly available environmental record associated with the property, while the remaining exhibits provide the supporting documentation from the IDNR and EPA files.

The attached exhibits are submitted solely to assist the Commission in understanding the documented public record. They are **not** intended to suggest what the current environmental condition of the property may be today, nor are they intended to replace any environmental investigation or regulatory review required by applicable law.

Rather, these records demonstrate that substantial environmental investigations occurred, significant contamination was documented, additional investigation was

recommended, and unresolved environmental questions remained identified within the State's own records.

Accordingly, we respectfully request that these publicly available documents be included in the official record for Rezoning Application ZONG-2026-000013 and be considered as part of the Commission's review and deliberations.

We appreciate the Commission's careful review of these materials and respectfully request that this letter and the accompanying exhibits be accepted into the official record for Rezoning Application ZONG-2026-000013.

The Jordan Task Force Group appreciates the Commission's commitment to a transparent public process and respectfully submits these materials so that the Commission, the City Council, neighboring property owners, and future residents may have the benefit of a complete and well-documented public record when considering this application.

Thank you for your time, your service to the City of Des Moines, and your careful consideration of this application.

Respectfully submitted,

**Jordan Task Force Group
Neighboring Residents and Property Owners**

Exhibits

Exhibit A – Iowa Department of Natural Resources USER Site Information Report (2009) (CON 12-15, Doc. #20342).

Exhibit B – IDNR / EPA Investigation File documenting the 1991–1992 environmental investigation, hazardous waste disposal, buried drums, contaminant migration, and laboratory findings.

Exhibit C – IDNR Follow-Up Investigation Report recommending groundwater sampling, removal of buried drums, and additional remediation.

Exhibit D – Historical IDNR/EPA Site Maps, Sampling Locations, Investigation Photographs, and Supporting Documentation.

Exhibit E – Historical Environmental Timeline of the Former COTA Industries Property.

Exhibit F – Current Concept Plan and Rezoning Site Plan.

From: thejordantaskforce@yahoo.com
To: [Planning; Chakraborty, Sreyoshi](#)
Cc: [Barron, Rob X.; Westergaard, Linda C.; Mandelbaum, Josh T.; Gatto, Joe P.; Voss, Carl B.; Simonson, Mike W.; Boesen, Connie S.; Josie.lewis@dmschools.org; rainey.briggs@dmschools.org; matthew.smith@dmschools.org; gina.brookhart-newcomb@dmschools.org; Jordan Task](#)
Subject: Final Comments Regarding Lovejoy Elementary School – Rezoning Application ZONG-2026-000013
Date: Wednesday, July 15, 2026 11:05:36 AM

EXTERNAL EMAIL - This email was sent by a person from outside your organization. Exercise caution when clicking links, opening attachments or taking further action, before validating its authenticity.

Dear Chair, Members of the Planning and Zoning Commission, and Planning Staff,

As you prepare for tomorrow evening's public hearing, we respectfully ask you to give special consideration to one issue that we believe deserves careful attention before any recommendation is made—Lovejoy Elementary School.

The property proposed for rezoning is immediately adjacent to Lovejoy Elementary School. Every school day, hundreds of children arrive by school bus, family vehicle, on foot, and by bicycle. Teachers, staff, parents, volunteers, and emergency responders all depend upon safe and efficient access to the school. Because of its location, we believe this proposal deserves the highest level of planning review.

This application is not simply about a proposed 55-and-over apartment building. The Commission is being asked to recommend a permanent amendment to the City's Comprehensive Plan and a permanent change in zoning. Once those development rights are granted, they remain with the property regardless of future ownership, future market conditions, or future development proposals. That is why this decision is about much more than one building. It is about the long-term planning of the neighborhood surrounding Lovejoy Elementary School.

Throughout this process, our neighborhood has continued to ask several basic questions.

- Has a School Impact Analysis been completed or requested?
- Has a Traffic Impact Study evaluated conditions during school arrival and dismissal times?
- Has a Pedestrian Safety Study evaluated the routes children use to walk and bike to school?
- Has the Des Moines Public School District been formally consulted regarding the potential impacts on school operations?
- Have school bus circulation, parent drop-off and pick-up operations, neighborhood traffic patterns, parking demand, and emergency vehicle access been fully evaluated?

If these studies have been completed, we respectfully ask that they be identified as part of the public record. If they have not, we respectfully ask whether permanent land-use rights should be recommended before these important questions have been

answered.

During the neighborhood open house, many residents asked questions regarding traffic, pedestrian safety, school impacts, infrastructure capacity, parking, the anticipated number of residents, and long-term planning. We left the meeting with the understanding that many of those questions would be addressed only after the requested Comprehensive Plan amendment and rezoning were approved. We respectfully believe those are exactly the questions that should be answered before permanent development rights are granted—not afterward.

There was also discussion during the open house about the possibility of Lovejoy Elementary students participating in future reading activities with residents of the proposed development. While intergenerational programs can certainly be meaningful educational opportunities, we respectfully believe those decisions belong to the Des Moines Public School District, its educators, and the families it serves—not as a community benefit associated with a land-use proposal.

Iowa Code § 414.3 provides that zoning decisions are to be made in accordance with the Comprehensive Plan and with consideration given to transportation, traffic congestion, public safety, schools, the prevention of overcrowding of land, the appropriate use of land, and the general welfare. We respectfully believe those planning principles are especially important when the property under consideration directly borders an active elementary school.

Lovejoy Elementary is more than a neighboring property. It is a long-term public investment that serves generations of Des Moines families. The children attending Lovejoy today—and those who will attend years from now—will live with the consequences of the land-use decisions made around their school.

We recognize that housing is important, including housing for older adults. Our request is not based on opposition to seniors or to new housing. Our concern is that permanent changes to the Comprehensive Plan should be supported by complete information and thoughtful planning, especially when those changes directly affect an elementary school and the children it serves.

We respectfully believe that uncertainty should weigh in favor of additional review—not permanent rezoning. For these reasons, we respectfully ask the Commission to recommend denial of the requested Comprehensive Plan amendment and rezoning. If the Commission believes additional information is needed, we respectfully ask that action be postponed until the necessary planning studies have been completed, the School District has been fully consulted, and the public has had an opportunity to review that information.

Thank you for your time, your thoughtful consideration, and your service to the City of Des Moines. We sincerely appreciate the responsibility you have in making decisions that will shape our community for many years to come.

Respectfully,

The Jordan Task Force Group
Neighboring Property Owners and Residents

From: thejordantaskforce@yahoo.com
To: rainey.briggs@dmschools.org; matthew.smith@dmschools.org; gina.brookhart-newcomb@dmschools.org
Cc: [Jordan Task](#); [Chakraborty, Sreyoshi](#)
Subject: Invitation to Neighborhood Open House – Rezoning Application ZONG-2026-000013
Date: Wednesday, July 8, 2026 11:48:00 AM

EXTERNAL EMAIL - This email was sent by a person from outside your organization. Exercise caution when clicking links, opening attachments or taking further action, before validating its authenticity.

Good afternoon,

We wanted to make you aware that the Jordan Task Force Group has requested that Nelson Construction provide copies of the materials that will be presented at tomorrow's neighborhood open house. Our request includes the site plan, architectural renderings, project timeline, traffic and parking information, environmental due diligence documents, and any technical studies or reports that may have been prepared in support of the proposed rezoning application.

Our hope is that reviewing these materials in advance will allow residents, community stakeholders, and public agencies to have a more informed and productive discussion regarding the proposal.

We would also like to extend an invitation to you and any interested members of the Des Moines Public Schools team to attend tomorrow's neighborhood open house.

Neighborhood Open House

Thursday, July 9

4:30 p.m. – 6:30 p.m.

Bowlerama Lanes

1313 E. Diehl Avenue

Des Moines, IA 50315

Given the property's close proximity to Lovejoy Elementary School, we believe this meeting provides an important opportunity for District representatives to review the proposed development, ask questions, and hear directly from the developer regarding topics such as student safety, pedestrian access, traffic, infrastructure, environmental due diligence, and the long-term implications of the proposed Comprehensive Plan amendment and rezoning.

As you know, the Jordan Task Force Group has expressed concerns regarding school safety, traffic during student arrival and dismissal times, pedestrian circulation, emergency vehicle access, infrastructure capacity, and the long-term development rights that would accompany the requested rezoning.

If you are unable to attend, we completely understand. We will be happy to share our meeting minutes, copies of the materials provided by the developer, and any additional information presented during the open house so that the District remains informed as the public review process moves forward.

Thank you again for your time, consideration, and continued commitment to the students,

families, and neighborhoods you serve. We appreciate your continued interest in this matter and look forward to working together throughout the review process.

Respectfully,

The Jordan Task Force Group

----- Forwarded Message -----

From: thejordantaskforce@yahoo.com <thejordantaskforce@yahoo.com>
To: Alexander Grgurich <alexander@nelsonconstruct.com>
Cc: Jordan Task <thejordantaskforce@yahoo.com>
Sent: Wednesday, July 8, 2026 at 11:34:03 AM CDT
Subject: Request for Project Materials Prior to Neighborhood Open House : Neighborhood Meeting and Rezoning Timeline

Good afternoon, Alexander,

Thank you again for organizing tomorrow's neighborhood open house. The Jordan Task Force Group appreciates the opportunity to attend, ask questions, and participate in the discussion regarding the proposed rezoning application.

To help ensure a productive and informed discussion, we respectfully request electronic copies of any materials that will be presented or distributed during the meeting. If possible, receiving these materials today would provide our members with an opportunity to review the information in advance and prepare thoughtful, informed questions.

If available, we would appreciate copies of the following:

- Overall site plan and development layout.
- Architectural renderings, building elevations, and floor plans.
- Project summary, timeline, and any informational handouts.
- Parking plan, circulation plan, and traffic information.
- Proposed access points, sidewalks, pedestrian connections, and bicycle accommodations.
- Landscaping, lighting, stormwater management, grading, and utility plans.
- Any easel boards, presentation boards, or exhibits that will be displayed during the open house.
- Any studies, reports, or analyses that will be referenced during the meeting.

Additionally, because many of our members have expressed concerns regarding environmental conditions, public safety, and long-term planning, we would also appreciate copies of any available:

- Phase I and/or Phase II Environmental Site Assessments.
- Environmental investigations, remediation reports, or due diligence documents.
- Traffic Impact Studies or Traffic Impact Analyses.
- Parking demand studies.
- Pedestrian or bicycle safety studies.

- School impact analyses or correspondence with the Des Moines Public School District.
- Emergency vehicle access analyses.
- Infrastructure or utility capacity studies.
- Any other technical reports or supporting documentation submitted to the City or prepared in support of the rezoning application.

Our goal is to review the proposal as thoroughly as possible so that tomorrow's discussion can focus on meaningful dialogue and constructive questions. We believe providing these materials in advance promotes transparency, encourages informed public participation, and benefits everyone involved in the process.

Thank you again for your time, consideration, and willingness to engage with the neighborhood. We look forward to meeting with you and your team tomorrow evening.

Respectfully,

The Jordan Task Force Group

On Thursday, July 2, 2026 at 12:28:56 PM CDT, Alexander Grgurich <alexander@nelsonconstruct.com> wrote:

Good afternoon,

We have confirmed the location for our July 09 "open house" style neighborhood meeting for our proposed rezoning at Bowlerama Lanes at 1313 E Diehl Ave, Des Moines, IA 50315 from 4:30p - 6:30p.

I will be there as the developer and our architects will be there also so we can get as much input as possible. Our plan is to have multiple easels with the site plan and project information as well as some handouts with specific information on our project, timeline, and next steps.

Neighbors can feel free to come and go at whatever time works best for your individual schedules, this is "open house" style so that as many people as possible can attend.

Thank you for the time and consideration and I look forward to seeing everyone next Thursday at Bowlerama Lanes (directly south of the proposed project) between 4:30p and 6:30p.

Alexander

Alexander Grgurich | Director of Development and Chief Operating Officer

O: 515.457.9000 | alexander@nelsonconstruct.com

Nelson Construction & Development
405 6th Ave, Ste 201 • Des Moines, IA, 50309

From: thejordantaskforce@yahoo.com
To: [Planning](#); [Chakraborty, Sreyoshi](#)
Cc: [Barron, Rob X.](#); [Westergaard, Linda C.](#); [Mandelbaum, Josh T.](#); [Gatto, Joe P.](#); [Voss, Carl B.](#); [Simonson, Mike W.](#); [Boesen, Connie S.](#); josie.lewis@dmschools.org; rainey.briggs@dmschools.org; matthew.smith@dmschools.org; gina.brookhart-newcomb@dmschools.org; [Jordan Task](#)
Subject: Final Comments Before the Public Hearing – Rezoning Application ZONG-2026-000013
Date: Wednesday, July 15, 2026 1:39:44 PM

EXTERNAL EMAIL - This email was sent by a person from outside your organization. Exercise caution when clicking links, opening attachments or taking further action, before validating its authenticity.

Good afternoon, Madam Chair and Members of the Planning and Zoning Commission,

As you prepare for tomorrow evening's public hearing, we wanted to take one last opportunity to thank you for the time, attention, and thought you have given to Comprehensive Plan Amendment and Rezoning Application ZONG-2026-000013.

We know this has not been a simple application to review, and we appreciate the time you have invested in reading the materials, listening to residents, and considering the information that has been submitted.

The Jordan Task Force Group has volunteered countless hours trying to better understand this proposal. We are simply neighbors who care deeply about our community and the future of the area where we live. Together, we have reviewed PlanDSM, City planning documents, Iowa Department of Natural Resources records, Environmental Protection Agency records, traffic information, and many other publicly available documents. We have attended meetings, submitted public records requests, met with the applicant, and shared our research with the Planning and Zoning Commission, the City Council, and the Des Moines Public School District.

Our goal has never been to make this process more difficult. Our goal has been to make sure that such an important, permanent planning decision is made with as much information as possible. As we continued our research, we also spent time reviewing Iowa Code § 414.3, which outlines the planning principles that guide zoning decisions throughout Iowa. The law speaks about considering transportation, traffic congestion, public safety, schools, appropriate land use, preventing overcrowding, and promoting the general welfare. Those are the very issues our neighborhood has continued to raise throughout this process. They are not simply neighborhood concerns—they are planning considerations that Iowa law recognizes as important when communities make long-term land use decisions.

As we prepare for tomorrow's meeting, we continue to come back to one simple question:

What has changed since PlanDSM was adopted that justifies changing this property from Low Density Residential to High Density Residential?

The Comprehensive Plan was created to provide long-term guidance for the City, neighborhoods, businesses, and future residents. If that long-term vision is going to change, we respectfully believe there should be a clear planning reason, supported by the public record, explaining why the proposed amendment better serves the community than the existing plan.

Throughout this process, many questions have been raised regarding the future development of the entire 12.36-acre site, traffic, roadway capacity, parking, pedestrian safety, Lovejoy Elementary School, infrastructure, environmental due diligence, and the cumulative impacts if the property is fully developed under the proposed zoning.

We appreciate the information the applicant has shared. At the same time, we also understand that additional engineering, site planning, and technical work is expected to occur after rezoning. That gives us pause because once the Comprehensive Plan is amended and the property is rezoned, those development rights become permanent and stay with the land regardless of future ownership or future proposals. As neighbors, we simply believe those questions should be answered before permanent development rights are granted—not afterward.

One of the things we have learned throughout this process is that a Comprehensive Plan is much more than a map. It is the City's promise to thoughtfully guide growth and protect the long-term interests of the entire community. We hope that promise will remain at the center of tomorrow's discussion.

Regardless of the outcome, we are grateful for the opportunity to participate in this process. Our neighborhood has worked together respectfully, shared information openly, and tried to contribute in a constructive way. We appreciate everyone who has taken the time to listen. Thank you again for your public service and for the difficult work you do on behalf of our community.

We respectfully ask that your recommendation be guided by the principles of Iowa Code § 414.3, the goals of PlanDSM, and the long-term interests of the residents, neighborhoods, Lovejoy Elementary School, and future generations who will live with this decision.

Respectfully,

The Jordan Task Force Group

From: thejordantaskforce@yahoo.com
To: [Planning; Chakraborty, Sreyoshi](#)
Cc: [Jordan Task](#)
Subject: Fw: FW Re: Neighborhood Meeting
Date: Thursday, June 25, 2026 11:15:08 AM

EXTERNAL EMAIL - This email was sent by a person from outside your organization. Exercise caution when clicking links, opening attachments or taking further action, before validating its authenticity.

Please see the email correspondence below, which documents Councilman Joe Gatto's invitation for the Jordan Task Force Group to attend a meeting with Nelson Construction regarding proposed Rezoning Application ZONG-2026-000013.

We appreciate the opportunity to participate in this discussion. As the homeowners and property owners most directly impacted by this proposal, we believe it is important that we have the opportunity to hear the developer's presentation, ask questions, and provide meaningful input before any recommendations or decisions are made.

We look forward to working collaboratively with Councilman Gatto, the Neighborhood Association, and Nelson Construction at the upcoming meeting. Following the meeting, the Jordan Task Force Group will prepare and share meeting notes with our members and other interested stakeholders so that everyone remains informed throughout the review process.

----- Forwarded Message -----

From: thejordantaskforce@yahoo.com <thejordantaskforce@yahoo.com>
To: Alexander Grgurich <alexander.grgurich@gmail.com>; Alexander Grgurich <alexander@nelsonconstruct.com>; Joe Gatto <joe@barattas.com>
Cc: Lisa Ross <stockerross@msn.com>; Jordan Task <thejordantaskforce@yahoo.com>
Sent: Thursday, June 25, 2026 at 10:53:32 AM CDT
Subject: FW Re: Neighborhood Meeting and Rezoning Timeline

Good afternoon,

Thank you for the invitation. It is very much appreciated, and we look forward to attending.

Many of us have been active members of the Neighborhood Association over the years, and several of us have lived in this neighborhood since the 1960s and 1970s. We have raised our families here, invested in our homes, and care deeply about the future of our community.

In 2009, the Jordan Task Force Group was established to provide a focused forum for residents to work collaboratively with developers, City staff, elected officials, and other stakeholders. Its purpose has always been to encourage open communication, identify neighborhood concerns, and work toward practical solutions that balance the interests of both the neighborhood and proposed development. We have found that

bringing stakeholders together through respectful dialogue has led to meaningful, positive outcomes for everyone involved.

Today, our group consists primarily of the homeowners and property owners who are most directly affected by Rezoning Application ZONG-2026-000013. Many of our members reside immediately adjacent to the proposed development or within the 250-foot notification area. As part of the public process, our names and addresses have been provided to the Neighborhood Association, the Plan and Zoning Commission, and all members of the Des Moines City Council.

Our goal is not to create conflict or oppose development simply for opposition's sake. Rather, we hope to work collaboratively with the Neighborhood Association, Nelson Construction, Snyder & Associates, City staff, and elected officials to ensure that the concerns of nearby residents are heard, understood, and thoughtfully considered throughout the review process. We believe the best outcomes are achieved when everyone has an opportunity to participate openly, respectfully, and in good faith.

We appreciate the opportunity to participate and look forward to a productive discussion. We also hope this meeting marks the beginning of renewed collaboration between the Neighborhood Association and the Jordan Task Force Group as we work together to represent residents' interests and the future of our community.

Thank you again for your invitation.

Respectfully,

The Jordan Task Force Group

**On Thursday, June 25, 2026 at 09:25:48 AM CDT, Joe Gatto
<joe@barattas.com> wrote:**

Hi Alexander,

I wanted to give you a heads-up regarding a new group called the Jordan Task Force. They are separate from the established neighborhood association, and I do not have specific details on their members or where they reside.

Please ensure this group is included in the public meeting you are scheduling prior to the Plan and Zoning Commission hearing. Additionally, please include both Lisa Ross and me in that meeting invitation.

I believe we can effectively address their concerns during this process.

Best regards,

Joe Gatto

----- Forwarded message -----

From: thejordantaskforce@yahoo.com <thejordantaskforce@yahoo.com>

Date: Thu, Jun 25, 2026 at 9:09 AM

Subject: Neighborhood Meeting and Rezoning Timeline

To: LISA ROSS <stockerross@msn.com>

Cc: Gatto, Joe P. <joegatto@dmgov.org>, Jordan Task <thejordantaskforce@yahoo.com>

Good afternoon,

Thank you for the information. We will print it and share it with the Jordan Task Force Group.

We will also let everyone know about the Facebook page; however, many of our members do not use social media or even have email access. In fact, our oldest member is nearly 98, so printed information is often the best way for many of our neighbors to stay informed.

Could you also let us know when the next meeting with Nelson Construction and/or Snyder & Associates is scheduled? We would very much like to attend, listen, ask questions, and participate in the discussion.

Will that meeting take place before the next quarterly Neighborhood Association meeting? If not, will the rezoning application be postponed until after that meeting so residents have an opportunity to ask questions and provide input before the application moves forward?

We believe it is important that the residents most directly affected by this proposal have a meaningful opportunity to engage with the applicant, City staff, and the Neighborhood Association before any recommendations or decisions are made. Open communication and transparency are essential to ensuring that all concerns are heard and fairly considered.

Thank you again for your time and assistance. We truly appreciate your help and look forward to hearing from you.

Sincerely,

The Jordan Task Force Group

LOVAN, SOUAN 805 E PORTER AVE

CHAPMAN, MATTHEW 5603 SE 8TH ST

RALEIGH, REBECCA 731 E PORTER AVE

SNELLER, JAMES & CHRISTINE 732 E DIEHL AVE

TIMM, THERESA 731 E DIEHL AVE

VILLALOBOS, FREDERICK 5617 SE 8TH ST
BUTRUM, DAKOTA J 810 E DIEHL AVE
DAVILA, GABRIELLA 816 E DIEHL AVE
CLELAND, MATTHEW DAVID 902 E DIEHL AVE
DALE, PATRICIA J 908 E DIEHL AVE
FRAVEL, JOHN P 914 E DIEHL AVE
OGLE-RICCELLI, CHAD & MICHELE 920 E DIEHL AVE
TODHUNTER, JONATHAN & AMY 1006 E DIEHL AVE
MILLS, CHERYL D 1010 E DIEHL AVE
DOLL, THERESA 1016 E DIEHL AVE
BARTELT, JANET 1011 E DIEHL AVE
HUTCHISON, HELEN 1007 E DIEHL AVE
MENNINGA, LINDA 1007 E DIEHL AVE
BURNS, MICHAEL 1001 E DIEHL AVE
SIEMER, SCOT & AMY 921 E DIEHL AVE
BEARD, JAMAAL 915 E DIEHL AVE
BACCAM, KIKEO KENNY & JACKIE 5703 SE 8TH ST
KLITZKE, RICK 728 E DIEHL AVE
FIERRO, SHELIA 5621 SE 8TH ST

On Wednesday, June 24, 2026 at 03:32:58 PM CDT, LISA ROSS <stockerross@msn.com> wrote:

Here is the post card that was mailed to everyone in the neighborhood association. It was mail earlier this year. If you want to participate in the association, the dates are listed on the post card.

As I stated in my email, the best place to keep up to date is on the South Central DSM Neighborhood Association Facebook page. I would welcome you to join that



Thank you

Lisa Stocker-Ross
President South Central DSM NA

Sent from my Galaxy

----- Original message -----

From: thejordantaskforce@yahoo.com

Date: 6/24/26 2:02 PM (GMT-06:00)

To: Joe Gatto <joe@barattas.com>

Cc: Lisa Ross <stockerross@msn.com>

Subject: Re: EMAIL 1 || ZONG-2026-000013 Request for Public Disclosure of Traffic, Pedestrian Safety, and School Impact Studies

Thank you for the email.

We would like to participate in the Neighborhood Association meeting referenced during the meeting and noted in the letter from Snyder & Associates. We would appreciate being included in any future discussions regarding this proposal and ask that you please notify us once the meeting date, time, and location have been finalized.

On Tuesday, June 23, 2026 at 12:09:27 PM CDT, Joe Gatto <joe@barattas.com> wrote:

Dear Jordan Task Force,

I have included Lisa Ross on this thread, as I would welcome the opportunity to have a conversation to address your concerns regarding the proposal for ZONG-2026-000013.

The current state of the parcel unfortunately attracts homeless camps in close proximity to Lovejoy Elementary, which is a significant issue. Regarding student safety, I recognize that the area currently lacks essential infrastructure like sidewalks and traffic lights on SE 14th Street. However, I believe most of your concerns can be effectively addressed through the planning process.

The request for a 55+ senior living development is a vision that Lisa and the neighborhood association have consistently shared with me for this property over the last 12 years. I believe this

remains an appropriate use for the land.

I would be happy to meet with your members to discuss this further. Please let me know your availability so we can schedule a time to talk.

Best regards,

Joe Gatto

On Tue, Jun 23, 2026 at 11:26 AM thejordantaskforce@yahoo.com <thejordantaskforce@yahoo.com> wrote:

Dear Mayor and Members of the City Council,

We would like to introduce ourselves as the Jordan Task Force Group, a coalition of nearby residents and property owners who are directly affected by the proposed Comprehensive Plan amendment and rezoning request identified as ZONG-2026-000013.

Our group includes many residents who received official voting cards regarding this proposal, as well as additional neighboring property owners who share concerns about the potential impacts of this development on our neighborhood. Collectively, our members represent decades of residency, investment, and involvement in the South Side community. Many of us have lived in this neighborhood for generations, attended local schools, raised families here, and remained active in community and neighborhood affairs.

At this time, the Jordan Task Force Group respectfully opposes the proposed Comprehensive Plan amendment and rezoning request. While we support responsible development and investment in our community, we have significant concerns regarding traffic, school safety, infrastructure capacity, future development rights, neighborhood compatibility, and the long-term impacts this proposal may have on the surrounding area.

Our goal is simply to ensure that residents have the opportunity to ask questions, share concerns, and participate constructively in the process with informed input. The Jordan Task Force Group intends to be organized, respectful, and efficient in its communications. We hope to avoid duplicating comments while ensuring that the concerns, questions, and information gathered from residents are presented in a thoughtful and well-documented manner.

We look forward to working with City staff, the Plan and Zoning Commission, City Council members, neighborhood leaders, and the applicant throughout this process. We believe that meaningful public participation is an important part of good planning and decision-making, and we appreciate the opportunity to have our voices heard.

Thank you for your time, service, and consideration. We appreciate all that you do for the residents of Des Moines and look forward to participating in the public process.

Below is an email that was sent yesterday outlining some of our concerns regarding

Lovejoy Elementary School and the potential impacts this proposal may have on the surrounding neighborhood.

On a lighter note, several members of our group attended Lovejoy Elementary School in the 1970s and 1980s and still live in the very homes where they grew up. Our roots in this neighborhood run deep, and we care greatly about preserving the character, safety, and quality of life that have made this community such a special place to call home.

Respectfully,

Jordan Task Force Group

----- Forwarded Message -----

From: thejordantaskforce@yahoo.com <thejordantaskforce@yahoo.com>
To: schakraborty@dmgov.org <schakraborty@dmgov.org>; Planning@dmgov.org <Planning@dmgov.org>
Cc: CityCouncil@dmgov.org <CityCouncil@dmgov.org>
Sent: Monday, June 22, 2026 at 10:29:57 AM CDT
Subject: Request for Public Disclosure of Traffic, Pedestrian Safety, and School Impact Studies – ZONG-2026-000013

Dear Members of the Plan and Zoning Commission,

We are a large group of neighbors impacted by Rezoning Application ZONG-2026-000013. We have significant concerns regarding this proposal and respectfully request that the Commission carefully evaluate its potential impacts on Lovejoy Elementary School, its students and staff, and surrounding neighborhoods before moving forward.

The proposal would amend the City's Comprehensive Plan and rezone approximately 12.36 acres near East Diehl Avenue, East Porter Avenue, East Kenyon Avenue, and Southeast 14th Street to permit a five-story, 110-unit apartment building, along with additional future residential and commercial development.

While the developer has described the project as age-restricted senior housing, the Commission is not voting on a housing concept or marketing plan. The Commission is being asked to approve permanent land use rights and amend the Comprehensive Plan. Once granted, those zoning rights remain with the property regardless of future ownership, market conditions, or future development proposals.

Our primary concern is the immediate proximity of this development to Lovejoy Elementary School.

Any significant increase in residential density adjacent to an elementary school should be supported by detailed studies and analysis. To date, we are unaware of any publicly presented information addressing the impact this proposal may have on student safety, school operations, traffic congestion, pedestrian access, or future

school capacity.

We respectfully request answers to the following questions:

- Has a Traffic Impact Study been completed that specifically evaluates school drop-off and pick-up periods?
- Has a Pedestrian Safety Study been completed evaluating children walking and biking to school?
- Has the Des Moines Public School District been formally consulted regarding this proposal?
- Has a School Impact Analysis been completed?
- Has the City evaluated the effect this development could have on future school enrollment and capacity?
- Has emergency vehicle access been evaluated during peak school traffic periods?
- Have school bus circulation and student crossing patterns been analyzed?

Our concerns include:

- Increased traffic entering and exiting the area during school arrival and dismissal times.
- Increased pedestrian conflicts involving children walking and biking to school.
- Additional turning movements and congestion along East Diehl Avenue, East Porter Avenue, Southeast 14th Street, and surrounding residential streets.
- Potential interference with school buses, emergency vehicles, and parent pick-up lines.
- Overflow parking into nearby residential streets and school-adjacent areas.

The proposal includes only 60 parking spaces for 110 apartment units. While this may satisfy minimum zoning requirements, many residents question whether it accurately reflects real-world parking demand. Any overflow parking could create additional congestion and safety concerns in the vicinity of the school.

We are also concerned that the repeated emphasis on "senior housing" may distract from the broader zoning implications. The rezoning request would create permanent development rights that could extend well beyond the current proposal. Future owners may not share the same vision as the current developer, and future uses may create additional impacts on schools and surrounding neighborhoods.

We respectfully ask the Commission to disclose what studies, analyses, and consultations have been completed regarding:

- School safety.
- Traffic impacts during school hours.
- Pedestrian safety.
- School capacity and enrollment impacts.
- Emergency access.
- Parking demand.
- Long-term development rights under the proposed zoning classification.

Given the location of this proposal, immediately adjacent to Lovejoy Elementary School, we believe any approval would be premature without comprehensive data and public review of these issues.

The safety of students, the efficient operation of our schools, and responsible long-term planning should be fully evaluated before any Comprehensive Plan amendment or rezoning request is considered.

We appreciate your time and consideration and respectfully request that these questions be addressed publicly before any recommendation is made regarding ZONG-2026-000013.

Sincerely,

The Jordan Task Force Group
40+ Concerned Neighbors and Growing

--
Joe Gatto
City Council Ward IV
515-402-2626

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Joe Gatto
City Council Ward IV
515-402-2626

From: thejordantaskforce@yahoo.com
To: [Planning](#); [Chakraborty, Sreyoshi](#)
Subject: Neighborhood Meeting and Rezoning Timeline | Income-restricted apartments
Date: Wednesday, July 1, 2026 1:07:13 PM

EXTERNAL EMAIL - This email was sent by a person from outside your organization. Exercise caution when clicking links, opening attachments or taking further action, before validating its authenticity.

Good afternoon,

We wanted to make the Plan and Zoning Commission aware that Nelson Construction has scheduled a neighborhood meeting regarding Rezoning Application ZONG-2026-000013. According to the developer, the meeting is scheduled for **Thursday, July 9, from 4:30 p.m. to 6:30 p.m.** and will be conducted in **an open-house format**. Additional details, including the meeting location, are expected to be provided shortly.

We also wanted to note that the developer has clarified that the proposed project is **income-restricted housing for residents age 55 and older**. While this information is helpful, we continue to believe it is important that the Commission evaluate the rezoning request based on the permanent land use and zoning rights being requested, rather than solely on the current development proposal.

We appreciate the opportunity for neighborhood input before this application proceeds further and look forward to participating in the meeting.

Thank you for your time and consideration.

Respectfully,

The Jordan Task Force Group

----- Forwarded Message -----

From: Alexander Grgurich <alexander@nelsonconstruct.com>
To: thejordantaskforce@yahoo.com <thejordantaskforce@yahoo.com>; Alexander Grgurich <alexander.grgurich@gmail.com>; **Joe Gatto** <joe@barattas.com>
Cc: **Lisa Ross** <stockerross@msn.com>; **Jordan Task** <thejordantaskforce@yahoo.com>
Sent: Tuesday, June 30, 2026 at 04:19:50 PM CDT
Subject: Re: FW Re: Neighborhood Meeting and Rezoning Timeline

Councilman Gatto and the Jordan Task Force:

I just confirmed with our architect that we will hold the neighborhood meeting Thursday July 09 from 4:30p - 6:30p. We will be fully confirmed on location and details by end of day tomorrow and I'll send everyone a full breakdown with all information for the input session. We are going

to do an “open house” style so that neighbors can come and go any time during the session so we get as much input as possible and don’t leave anyone out if they can’t attend right when the meeting starts.

The details about the Jordan Task Force were super helpful, thank you for sharing. And thank you for caring about the community to take your time to collaborate. As a developer we have a track record of engaging with neighbors on our projects and our architect, Slingshot, has also been very inclusive and hands-on with gathering neighborhood feedback and finding ways to incorporate it into projects.

Our rezoning request is for income-restricted apartments but they will be restricted to only those aged 55 and older. We look forward to sharing more at the neighborhood meeting about this senior citizen apartment project.

I will be emailing again tomorrow with more details on the neighborhood meeting - feel free to reach out directly to me if you have specific questions or comments / concerns.

Alexander

Alexander Grgurich | Director of Development and Chief Operating Officer

O: 515.457.9000 | alexander@nelsonconstruct.com

Nelson Construction & Development
405 6th Ave, Ste 201 • Des Moines, IA, 50309

[LINKEDIN](#) | [INSTAGRAM](#) | [FACEBOOK](#) | [WE'RE HIRING!](#)

From: thejordantaskforce@yahoo.com <thejordantaskforce@yahoo.com>

Sent: Thursday, 25 June 2026 10:53:32

To: Alexander Grgurich <alexander.grgurich@gmail.com>; Alexander Grgurich <Alexander@nelsonconstruct.com>; Joe Gatto <joe@barattas.com>

Cc: Lisa Ross <stockerross@msn.com>; Jordan Task <thejordantaskforce@yahoo.com>

Subject: FW Re: Neighborhood Meeting and Rezoning Timeline

You don't often get email from thejordantaskforce@yahoo.com. [Learn why this is important](#)

Good afternoon,

Thank you for the invitation. It is very much appreciated, and we look forward to attending.

Many of us have been active members of the Neighborhood Association over the years, and several of us have lived in this neighborhood since the 1960s and 1970s.

We have raised our families here, invested in our homes, and care deeply about the future of our community.

In 2009, the Jordan Task Force Group was established to provide a focused forum for residents to work collaboratively with developers, City staff, elected officials, and other stakeholders. Its purpose has always been to encourage open communication, identify neighborhood concerns, and work toward practical solutions that balance the interests of both the neighborhood and proposed development. We have found that bringing stakeholders together through respectful dialogue has led to meaningful, positive outcomes for everyone involved.

Today, our group consists primarily of the homeowners and property owners who are most directly affected by Rezoning Application ZONG-2026-000013. Many of our members reside immediately adjacent to the proposed development or within the 250-foot notification area. As part of the public process, our names and addresses have been provided to the Neighborhood Association, the Plan and Zoning Commission, and all members of the Des Moines City Council.

Our goal is not to create conflict or oppose development simply for opposition's sake. Rather, we hope to work collaboratively with the Neighborhood Association, Nelson Construction, Snyder & Associates, City staff, and elected officials to ensure that the concerns of nearby residents are heard, understood, and thoughtfully considered throughout the review process. We believe the best outcomes are achieved when everyone has an opportunity to participate openly, respectfully, and in good faith.

We appreciate the opportunity to participate and look forward to a productive discussion. We also hope this meeting marks the beginning of renewed collaboration between the Neighborhood Association and the Jordan Task Force Group as we work together to represent residents' interests and the future of our community.

Thank you again for your invitation.

Respectfully,

The Jordan Task Force Group

On Thursday, June 25, 2026 at 09:25:48 AM CDT, Joe Gatto <joe@barattas.com> wrote:

Hi Alexander,

I wanted to give you a heads-up regarding a new group called the Jordan Task Force. They are separate from the established neighborhood association, and I do not have specific details on their members or where they reside.

Please ensure this group is included in the public meeting you are scheduling prior to the Plan and Zoning Commission hearing. Additionally, please include both Lisa Ross

and me in that meeting invitation.

I believe we can effectively address their concerns during this process.

Best regards,

Joe Gatto

----- Forwarded message -----

From: thejordantaskforce@yahoo.com <thejordantaskforce@yahoo.com>

Date: Thu, Jun 25, 2026 at 9:09 AM

Subject: Neighborhood Meeting and Rezoning Timeline

To: LISA ROSS <stockerross@msn.com>

Cc: Gatto, Joe P. <joegatto@dmgov.org>, Jordan Task <thejordantaskforce@yahoo.com>

Good afternoon,

Thank you for the information. We will print it and share it with the Jordan Task Force Group.

We will also let everyone know about the Facebook page; however, many of our members do not use social media or even have email access. In fact, our oldest member is nearly 98, so printed information is often the best way for many of our neighbors to stay informed.

Could you also let us know when the next meeting with Nelson Construction and/or Snyder & Associates is scheduled? We would very much like to attend, listen, ask questions, and participate in the discussion.

Will that meeting take place before the next quarterly Neighborhood Association meeting? If not, will the rezoning application be postponed until after that meeting so residents have an opportunity to ask questions and provide input before the application moves forward?

We believe it is important that the residents most directly affected by this proposal have a meaningful opportunity to engage with the applicant, City staff, and the Neighborhood Association before any recommendations or decisions are made. Open communication and transparency are essential to ensuring that all concerns are heard and fairly considered.

Thank you again for your time and assistance. We truly appreciate your help and look forward to hearing from you.

Sincerely,

The Jordan Task Force Group

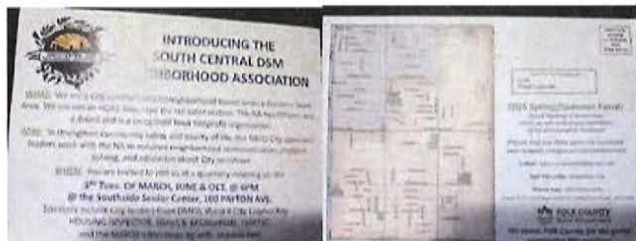
LOVAN, SOUAN 805 E PORTER AVE

CHAPMAN, MATTHEW 5603 SE 8TH ST
RALEIGH, REBECCA 731 E PORTER AVE
SNELLER, JAMES & CHRISTINE 732 E DIEHL AVE
TIMM, THERESA 731 E DIEHL AVE
VILLALOBOS, FREDERICK 5617 SE 8TH ST
BUTRUM, DAKOTA J 810 E DIEHL AVE
DAVILA, GABRIELLA 816 E DIEHL AVE
CLELAND, MATTHEW DAVID 902 E DIEHL AVE
DALE, PATRICIA J 908 E DIEHL AVE
FRAVEL, JOHN P 914 E DIEHL AVE
OGLE-RICCELLI, CHAD & MICHELE 920 E DIEHL AVE
TODHUNTER, JONATHAN & AMY 1006 E DIEHL AVE
MILLS, CHERYL D 1010 E DIEHL AVE
DOLL, THERESA 1016 E DIEHL AVE
BARTELT, JANET 1011 E DIEHL AVE
HUTCHISON, HELEN 1007 E DIEHL AVE
MENNINGA, LINDA 1007 E DIEHL AVE
BURNS, MICHAEL 1001 E DIEHL AVE
SIEMER, SCOT & AMY 921 E DIEHL AVE
BEARD, JAMAAL 915 E DIEHL AVE
BACCAM, KIKEO KENNY & JACKIE 5703 SE 8TH ST
KLITZKE, RICK 728 E DIEHL AVE
FIERRO, SHELIA 5621 SE 8TH ST

On Wednesday, June 24, 2026 at 03:32:58 PM CDT, LISA ROSS <stockerross@msn.com> wrote:

Here is the post card that was mailed to everyone in the neighborhood association. It was mail earlier this year. If you want to participate in the association, the dates are listed on the post card.

As I stated in my email, the best place to keep up to date is on the South Central DSM Neighborhood Association Facebook page. I would welcome you to join that



Thank you

Lisa Stocker-Ross
President South Central DSM NA

Sent from my Galaxy

----- Original message -----

From: thejordantaskforce@yahoo.com

Date: 6/24/26 2:02 PM (GMT-06:00)

To: Joe Gatto <joe@barattas.com>

Cc: Lisa Ross <stockerross@msn.com>

Subject: Re: EMAIL 1 || ZONG-2026-000013 Request for Public Disclosure of Traffic, Pedestrian Safety, and School Impact Studies

Thank you for the email.

We would like to participate in the Neighborhood Association meeting referenced during the meeting and noted in the letter from Snyder & Associates. We would appreciate being included in any future discussions regarding this proposal and ask that you please notify us once the meeting date, time, and location have been finalized.

On Tuesday, June 23, 2026 at 12:09:27 PM CDT, Joe Gatto <joe@barattas.com> wrote:

Dear Jordan Task Force,

I have included Lisa Ross on this thread, as I would welcome the opportunity to have a conversation to address your concerns regarding the proposal for ZONG-2026-000013.

The current state of the parcel unfortunately attracts homeless camps in close proximity to Lovejoy Elementary, which is a significant issue. Regarding student safety, I recognize that the area currently

lacks essential infrastructure like sidewalks and traffic lights on SE 14th Street. However, I believe most of your concerns can be effectively addressed through the planning process.

The request for a 55+ senior living development is a vision that Lisa and the neighborhood association have consistently shared with me for this property over the last 12 years. I believe this remains an appropriate use for the land.

I would be happy to meet with your members to discuss this further. Please let me know your availability so we can schedule a time to talk.

Best regards,

Joe Gatto

On Tue, Jun 23, 2026 at 11:26 AM thejordantaskforce@yahoo.com <thejordantaskforce@yahoo.com> wrote:

Dear Mayor and Members of the City Council,

We would like to introduce ourselves as the Jordan Task Force Group, a coalition of nearby residents and property owners who are directly affected by the proposed Comprehensive Plan amendment and rezoning request identified as ZONG-2026-000013.

Our group includes many residents who received official voting cards regarding this proposal, as well as additional neighboring property owners who share concerns about the potential impacts of this development on our neighborhood. Collectively, our members represent decades of residency, investment, and involvement in the South Side community. Many of us have lived in this neighborhood for generations, attended local schools, raised families here, and remained active in community and neighborhood affairs.

At this time, the Jordan Task Force Group respectfully opposes the proposed Comprehensive Plan amendment and rezoning request. While we support responsible development and investment in our community, we have significant concerns regarding traffic, school safety, infrastructure capacity, future development rights, neighborhood compatibility, and the long-term impacts this proposal may have on the surrounding area.

Our goal is simply to ensure that residents have the opportunity to ask questions, share concerns, and participate constructively in the process with informed input. The Jordan Task Force Group intends to be organized, respectful, and efficient in its communications. We hope to avoid duplicating comments while ensuring that the concerns, questions, and information gathered from residents are presented in a thoughtful and well-documented manner.

We look forward to working with City staff, the Plan and Zoning Commission, City Council members, neighborhood leaders, and the applicant throughout this process. We believe that meaningful public participation is an important part of good planning and decision-making, and we appreciate the opportunity to have our voices heard.

Thank you for your time, service, and consideration. We appreciate all that you do

for the residents of Des Moines and look forward to participating in the public process.

Below is an email that was sent yesterday outlining some of our concerns regarding Lovejoy Elementary School and the potential impacts this proposal may have on the surrounding neighborhood.

On a lighter note, several members of our group attended Lovejoy Elementary School in the 1970s and 1980s and still live in the very homes where they grew up. Our roots in this neighborhood run deep, and we care greatly about preserving the character, safety, and quality of life that have made this community such a special place to call home.

Respectfully,

Jordan Task Force Group

----- Forwarded Message -----

From: thejordantaskforce@yahoo.com <thejordantaskforce@yahoo.com>

To: schakraborty@dmgov.org <schakraborty@dmgov.org>; Planning@dmgov.org <Planning@dmgov.org>

Cc: CityCouncil@dmgov.org <CityCouncil@dmgov.org>

Sent: Monday, June 22, 2026 at 10:29:57 AM CDT

Subject: Request for Public Disclosure of Traffic, Pedestrian Safety, and School Impact Studies – ZONG-2026-000013

Dear Members of the Plan and Zoning Commission,

We are a large group of neighbors impacted by Rezoning Application ZONG-2026-000013. We have significant concerns regarding this proposal and respectfully request that the Commission carefully evaluate its potential impacts on Lovejoy Elementary School, its students and staff, and surrounding neighborhoods before moving forward.

The proposal would amend the City's Comprehensive Plan and rezone approximately 12.36 acres near East Diehl Avenue, East Porter Avenue, East Kenyon Avenue, and Southeast 14th Street to permit a five-story, 110-unit apartment building, along with additional future residential and commercial development.

While the developer has described the project as age-restricted senior housing, the Commission is not voting on a housing concept or marketing plan. The Commission is being asked to approve permanent land use rights and amend the Comprehensive Plan. Once granted, those zoning rights remain with the property regardless of future ownership, market conditions, or future development proposals.

Our primary concern is the immediate proximity of this development to Lovejoy Elementary School.

Any significant increase in residential density adjacent to an elementary school should be supported by detailed studies and analysis. To date, we are unaware of any publicly presented information addressing the impact this proposal may have on student safety, school operations, traffic congestion, pedestrian access, or future school capacity.

We respectfully request answers to the following questions:

- Has a Traffic Impact Study been completed that specifically evaluates school drop-off and pick-up periods?
- Has a Pedestrian Safety Study been completed evaluating children walking and biking to school?
- Has the Des Moines Public School District been formally consulted regarding this proposal?
- Has a School Impact Analysis been completed?
- Has the City evaluated the effect this development could have on future school enrollment and capacity?
- Has emergency vehicle access been evaluated during peak school traffic periods?
- Have school bus circulation and student crossing patterns been analyzed?

Our concerns include:

- Increased traffic entering and exiting the area during school arrival and dismissal times.
- Increased pedestrian conflicts involving children walking and biking to school.
- Additional turning movements and congestion along East Diehl Avenue, East Porter Avenue, Southeast 14th Street, and surrounding residential streets.
- Potential interference with school buses, emergency vehicles, and parent pick-up lines.
- Overflow parking into nearby residential streets and school-adjacent areas.

The proposal includes only 60 parking spaces for 110 apartment units. While this may satisfy minimum zoning requirements, many residents question whether it accurately reflects real-world parking demand. Any overflow parking could create additional congestion and safety concerns in the vicinity of the school.

We are also concerned that the repeated emphasis on "senior housing" may distract from the broader zoning implications. The rezoning request would create permanent development rights that could extend well beyond the current proposal. Future owners may not share the same vision as the current developer, and future uses

may create additional impacts on schools and surrounding neighborhoods.

We respectfully ask the Commission to disclose what studies, analyses, and consultations have been completed regarding:

- School safety.
- Traffic impacts during school hours.
- Pedestrian safety.
- School capacity and enrollment impacts.
- Emergency access.
- Parking demand.
- Long-term development rights under the proposed zoning classification.

Given the location of this proposal, immediately adjacent to Lovejoy Elementary School, we believe any approval would be premature without comprehensive data and public review of these issues.

The safety of students, the efficient operation of our schools, and responsible long-term planning should be fully evaluated before any Comprehensive Plan amendment or rezoning request is considered.

We appreciate your time and consideration and respectfully request that these questions be addressed publicly before any recommendation is made regarding ZONG-2026-000013.

Sincerely,

The Jordan Task Force Group
40+ Concerned Neighbors and Growing

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Joe Gatto
City Council Ward IV
515-402-2626

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Joe Gatto
City Council Ward IV
515-402-2626

From: thejordantaskforce@yahoo.com
To: [Planning; Chakraborty, Sreyoshi](#)
Cc: [Jordan Task; rainey.briggs@dmschools.org; matthew.smith@dmschools.org; gina.brookhart-newcomb@dmschools.org; Barron, Rob X.; Westergaard, Linda C.; Mandelbaum, Josh T.; Gatto, Joe P.; Voss, Carl B.; Simonson, Mike W.; Boesen, Connie S.](#)
Subject: Request for Deferral of Rezoning Application ZONG-2026-000013 Pending Completion of the Public Record
Date: Monday, July 13, 2026 3:04:38 PM
Attachments: [Exhibit A – Iowa Department of Natural Resources USER Site Information Report \(2009\) \(CON 12-15, Doc. #20342\).pdf](#)
[Exhibit B – IDNR EPA Investigation File documenting the 1991–1992 environmental investigation, hazardous waste disposal, buried drums, contaminant migration, and laboratory findings..pdf](#)
[2026.07.08 E14 POSTER - SITE DIAGRAM.pdf](#)
[2026.05.19 E14 - 1310 E DIEHL SITE PLAN v1.pdf](#)

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Request for Deferral of Rezoning Application ZONG-2026-000013 Pending Completion of the Public Record

The Jordan Task Force Group respectfully requests that the Planning and Zoning Commission defer action on Rezoning Application ZONG-2026-000013 until the environmental history of the former COTA Industries property has been fully reviewed, the public record is complete, and neighboring property owners have had a reasonable opportunity to review and comment upon the information that will form the basis of the Commission's recommendation.

This request is not intended to unnecessarily delay redevelopment, nor to challenge the work previously performed by the United States Environmental Protection Agency (EPA), the Iowa Department of Natural Resources (IDNR), or the applicant's environmental consultants. Rather, it reflects our belief that a permanent Comprehensive Plan amendment and rezoning should be based upon the most complete information reasonably available, particularly where the property has a documented industrial history and is proposed for long-term residential occupancy.

During the **Open House held on July 9, 2026**, representatives of Nelson Construction & Development and Slingshot Architecture met with neighboring residents to discuss the proposed rezoning application.

During those discussions, Alexander Grgurich, Director of Development and Chief Operating Officer of Nelson Construction & Development, advised attendees that an environmental assessment had been completed for the property. When neighboring residents asked whether that assessment would be made available for public review, we understood that it would not be released at this time.

During the discussion, neighboring residents also understood Mr.

Grgurich to characterize the historical environmental issue as involving a relatively small spill. However, publicly available records maintained by the IDNR and the EPA document a substantially broader environmental investigation of the former COTA Industries property.

The IDNR's 2009 USER Site Information Report identifies an investigation area of approximately 10 acres, while historical EPA and IDNR investigation records document decades of investigation involving buried drums, hazardous waste disposal, paint wastes, mercury, industrial solvents, volatile organic compounds, contaminant migration, and recommendations for additional investigation and remediation. Those public records appear to describe a significantly broader investigation than a single localized spill.

Because these publicly available records appear to differ from the understanding expressed during the neighborhood meeting, we respectfully believe additional clarification is appropriate before permanent residential development rights are granted. The Jordan Task Force Group is not asking the Commission to determine whether contamination currently exists, nor are we suggesting that the property cannot ultimately be developed for residential use. Rather, we respectfully request that the Commission ensure that the environmental record is complete before recommending a permanent Comprehensive Plan amendment and rezoning.

Despite reviewing publicly available EPA and IDNR records, neighboring property owners have been unable to determine:

- Whether the EPA's recommended mercury delineation was completed;
- Whether the recommended groundwater investigation was ever performed;
- Whether all buried drums and historical disposal areas were removed or otherwise addressed;
- Whether additional subsurface investigations were completed following the EPA's and IDNR's recommendations;
- Whether the applicant's environmental assessment evaluated the entire 12.36-acre property, or only the footprint of the proposed apartment building; and
- Whether the conclusions of the applicant's environmental consultant are consistent with the historical public record.

The IDNR's 2009 USER Site Information Report states:

"However, there has been no groundwater assessment and it is possible there may be

significant subsurface contamination with paint solvents. Drum disposal areas remain in place."

These historical findings do not necessarily establish the property's current environmental condition, nor do they establish that the property cannot be redeveloped. They do, however, identify important questions that remain unresolved within the publicly available record and that, in our opinion, should be addressed before the Commission recommends permanent residential land-use rights.

Groundwater investigations are an important component of environmental due diligence because groundwater can serve as a pathway through which dissolved contaminants migrate beneath the surface over time. While contaminants within soil may remain localized, groundwater movement can influence the extent and direction of contaminant migration depending upon site conditions. Clarifying whether the groundwater investigation recommended by the IDNR has since been completed would assist both the Commission and the public in understanding the current environmental status of the property.

Similarly, the public record indicates that historical drum disposal areas remained in place following earlier cleanup activities. Before permanent residential development rights are granted, we respectfully believe it is appropriate for the Commission to understand whether those historical disposal areas have since been fully investigated, whether any remaining source materials were removed, whether additional remediation was required, and whether any continuing monitoring or institutional controls remain in effect.

Likewise, references within the historical record to potential subsurface contamination associated with paint manufacturing operations raise important questions regarding the extent of investigation beneath the surface. Subsurface conditions generally cannot be evaluated through visual observation alone and typically require soil borings, groundwater sampling, or other environmental investigation methods to determine whether historical impacts have been fully addressed.

The Commission is not simply considering approval of a single apartment building. It is being asked to recommend a permanent amendment to the Comprehensive Plan and a permanent rezoning affecting approximately 12.36 acres.

During the Neighborhood Open House, Mr.

Grgurich explained that the overall development concept contemplates 4 apartment buildings ranging from 3 to 5 stories.

When neighboring residents asked about the total number of future residential units anticipated for the overall development, that information was not provided. Because the requested rezoning would establish permanent development rights for the entire property, we respectfully believe the Commission should understand the reasonably anticipated scale of future development before making its recommendation.

The Jordan Task Force Group recognizes that additional engineering, site design, and technical review will occur through subsequent City review processes. Nevertheless, once the Comprehensive Plan amendment and rezoning are approved, the fundamental land-use decision has been made. For that reason, we respectfully believe the Commission should have the benefit of the fullest reasonably available record before making a recommendation affecting the future development of this property.

Accordingly, the Jordan Task Force Group respectfully requests that the Planning and Zoning Commission defer action on Rezoning Application ZONG-2026-000013 until the public record has been completed and neighboring property owners have had a reasonable opportunity to review and comment upon the information referenced by the applicant.

Specifically, we respectfully request that the following information be made available for public review, to the extent it exists:

- The Phase I Environmental Site Assessment;
- Any Phase II Environmental Site Assessment;
- Documentation regarding groundwater investigations, if completed;
- Documentation describing the disposition of historical drum disposal areas;
- Documentation addressing the historical EPA and IDNR recommendations for additional investigation and remediation;
- Confirmation from the appropriate regulatory agencies regarding the property's current environmental status; and
- Any additional environmental documentation referenced by the applicant during the Neighborhood Open House.

Our request is not intended to oppose the redevelopment of the property or to reach conclusions unsupported by the available evidence. Rather, we respectfully ask that the Commission ensure it has a complete, transparent, and well-documented record before recommending permanent amendments to the Comprehensive Plan and the rezoning of approximately **12.36 acres for future residential development.**

We believe that taking the time to complete the public record before acting is consistent with sound planning principles, responsible governance, meaningful public participation, and the Commission's responsibility to make informed land-use recommendations that serve the long-term public interest.

Respectfully submitted,

JORDAN TASK FORCE GROUP

The Jordan Task Force Group respectfully submits that the information provided to the **Planning and Zoning Commission is the result of extensive research, collaboration, and review by neighboring property owners who have volunteered significant time and effort to better understand the history of the property and the potential implications of the proposed Comprehensive Plan amendment and rezoning.**

Our work is based upon a comprehensive review of publicly available information from numerous sources, including, but not limited to:

- Iowa Department of Natural Resources (IDNR) public records;
- United States Environmental Protection Agency (EPA) public records and historical investigation files;
- IDNR USER Site Information Reports;
- Historical IDNR microfiche records obtained through public records requests;
- EPA and IDNR environmental investigations, technical memoranda, laboratory analyses, correspondence, site maps, photographs, and supporting documentation;
- City of Des Moines public records, planning documents, rezoning materials, staff reports, and publicly available meeting information;
- Materials provided by the applicant, including presentation boards, correspondence, and information presented during the Neighborhood Open House;
- Historical property records and publicly available planning and environmental resources; and
- The collective professional knowledge, technical expertise, and life experience of members of the Jordan Task Force Group and neighboring property owners.

Our members represent a diverse group of residents with backgrounds in business, construction, engineering, environmental matters, public service, finance, education, healthcare, project management, and other professions. Throughout this process, members have worked collaboratively to review thousands of pages of historical records, compare information from multiple public sources, verify facts whenever possible, and ensure that our submissions accurately reflect the publicly available record.

Our objective has never been to oppose development for the sake of opposing development. Rather, our objective has been to ensure that decisions involving

permanent amendments to the Comprehensive Plan and zoning designation are based upon a complete, transparent, and well-documented public record.

Our research remains ongoing. Additional public records have been requested from the Iowa Department of Natural Resources, the United States Environmental Protection Agency, the City of Des Moines, and other agencies. As additional records become available, we intend to review those materials and promptly provide any information that may assist the Planning and Zoning Commission and the City Council in their consideration of Rezoning Application **ZONG-2026-000013**.

The Jordan Task Force Group appreciates the opportunity to participate in this public process and respectfully submits these materials in the interest of transparency, informed decision-making, and the long-term protection of the public interest.

*** **

On Tuesday, June 30, 2026 at 02:16:53 PM CDT, thejordantaskforce@yahoo.com <thejordantaskforce@yahoo.com> wrote:

Dear Chair and Members of the Planning and Zoning Commission:

On behalf of the Jordan Task Force Group and neighboring residents and property owners, thank you for your time and consideration of Rezoning Application ZONG-2026-000013.

We respectfully submit this letter and the attached exhibits to assist the Commission in its review of this application. The purpose of this correspondence is **not** to ask the Commission to determine environmental liability, regulatory compliance, or the current environmental condition of the property. Rather, our purpose is to ensure that the Commission's decision is informed by the publicly available environmental history of the property, including documented findings of the Iowa Department of Natural Resources (IDNR) and the United States Environmental Protection Agency (EPA), and to respectfully request that these publicly available records be included in the official record before permanent amendments to the Comprehensive Plan and zoning designation are approved.

The rezoning request before the Commission would permanently amend the City's Comprehensive Plan and change the zoning designation of property historically occupied by COTA Industries to permit substantially more intensive residential development. Once granted, those land use rights remain with the property regardless of future ownership or future development proposals. Because of the long-term significance of this decision, we respectfully believe the Commission should have the benefit of reviewing the documented environmental history associated with the property.

DOCUMENTED ENVIRONMENTAL HISTORY

Public records establish that COTA Industries operated paint manufacturing and coating operations on the property beginning in the 1950s. Historical operations involved paint formulation, industrial solvents, chemical storage, waste handling, and drum disposal associated with manufacturing activities. State and federal environmental investigations later documented approximately three decades of historical industrial waste disposal before formal investigations began in 1991.

Beginning in 1991, the Iowa Department of Natural Resources (IDNR) and the United States Environmental Protection Agency (EPA) initiated extensive investigations into historical waste disposal activities at the site. These investigations included geophysical surveys, exploratory trenching, excavation of suspected disposal areas, soil sampling, waste characterization, laboratory analyses, and site mapping.

The investigation records document the discovery of buried drums, deteriorated containers, hazardous sludges, paint wastes, and hazardous substances associated with historical manufacturing operations. Laboratory analyses identified contaminants including heavy metals, paint-related solvents, volatile organic compounds, and other industrial chemicals. Investigators further concluded that hazardous substances had been released into the environment and documented evidence of contaminant migration from disposal areas.

FOLLOW-UP INVESTIGATION

Following the initial investigation, the IDNR submitted an additional investigative report to the Iowa Attorney General documenting recommended corrective actions. Those recommendations included:

- Removal of visible contamination;
- Defining and remediating contaminated areas;
- Excavation and proper disposal of buried drums and wastes;
- Follow-up sampling of disposal areas; and
- Groundwater sampling.

These recommendations demonstrate that state regulators believed additional environmental investigation and remediation were necessary following the initial investigation.

THE 2009 IDNR USER SITE INFORMATION REPORT

Perhaps the most significant document attached is the Iowa Department of Natural Resources **USER Site Information Report** (CON 12-15, Doc. #20342), issued in 2009. This report serves as the State's summary of the environmental history associated with the former COTA Industries property and identifies an approximately **10-acre** site with documented historical contamination and investigation activities.

Most importantly, the report states:

"However, there has been no groundwater assessment and it is possible there may be significant subsurface contamination with paint solvents. Drum disposal areas remain in place."

The report further identifies **areas potentially impacted by the site**, indicating that evidence of contamination was not necessarily limited to the primary disposal locations. These observations are contained within the State's own environmental records and demonstrate that important environmental questions remained unresolved as of the IDNR's most recent summary report.

The Commission is not being asked to resolve these environmental questions. Rather, we

respectfully request that the documented public record be considered as part of the Commission's evaluation of this rezoning request.

WHY THIS INFORMATION MATTERS

We recognize that the Planning and Zoning Commission is not the agency responsible for environmental regulation. Nevertheless, the Commission is responsible for making recommendations regarding permanent land use decisions that affect surrounding neighborhoods and future development.

The attached records are relevant because they provide important historical context regarding the property's prior industrial use, documented hazardous waste investigations, and unresolved environmental issues identified within the public record. These are matters that we believe should be considered as part of the Commission's overall due diligence before recommending permanent changes to the Comprehensive Plan and zoning designation.

This information is particularly important because the proposed development includes approximately **110 residential units** together with areas identified for future residential and commercial development. Future residents, neighboring property owners, elected officials, and decision-makers deserve a complete understanding of the documented environmental history associated with this property.

PURPOSE OF THE ATTACHED EXHIBITS

For the Commission's convenience, **Exhibit E** provides a concise historical timeline summarizing the publicly available environmental record associated with the property, while the remaining exhibits provide the supporting documentation from the IDNR and EPA files.

The attached exhibits are submitted solely to assist the Commission in understanding the documented public record. They are **not** intended to suggest what the current environmental condition of the property may be today, nor are they intended to replace any environmental investigation or regulatory review required by applicable law.

Rather, these records demonstrate that substantial environmental investigations occurred, significant contamination was documented, additional investigation was recommended, and unresolved environmental questions remained identified within the State's own records.

Accordingly, we respectfully request that these publicly available documents be included in the official record for Rezoning Application ZONG-2026-000013 and be considered as part of the Commission's review and deliberations.

We appreciate the Commission's careful review of these materials and respectfully request that this letter and the accompanying exhibits be accepted into the official record for Rezoning Application ZONG-2026-000013.

The Jordan Task Force Group appreciates the Commission's commitment to a transparent public process and respectfully submits these materials so that the Commission, the City Council, neighboring property owners, and future residents may have the benefit of a complete and well-documented public record when considering this application.

Thank you for your time, your service to the City of Des Moines, and your careful consideration of this application.

Respectfully submitted,

Jordan Task Force Group

Neighboring Residents and Property Owners

Exhibits

Exhibit A – Iowa Department of Natural Resources USER Site Information Report (2009) (CON 12-15, Doc. #20342).

Exhibit B – IDNR / EPA Investigation File documenting the 1991–1992 environmental investigation, hazardous waste disposal, buried drums, contaminant migration, and laboratory findings.

Exhibit C – IDNR Follow-Up Investigation Report recommending groundwater sampling, removal of buried drums, and additional remediation.

Exhibit D – Historical IDNR/EPA Site Maps, Sampling Locations, Investigation Photographs, and Supporting Documentation.

Exhibit E – Historical Environmental Timeline of the Former COTA Industries Property.

Exhibit F – Current Concept Plan and Rezoning Site Plan.

From: thejordantaskforce@yahoo.com
To: [Chakraborty, Sreyoshi](#); [Planning](#)
Cc: CityCouncil@dmqov.org
Subject: Request for Public Disclosure of Traffic, Pedestrian Safety, and School Impact Studies – ZONG-2026-000013
Date: Monday, June 22, 2026 10:30:26 AM

EXTERNAL EMAIL - This email was sent by a person from outside your organization. Exercise caution when clicking links, opening attachments or taking further action, before validating its authenticity.

Dear Members of the Plan and Zoning Commission,

We are a large group of neighbors impacted by Rezoning Application ZONG-2026-000013. We have significant concerns regarding this proposal and respectfully request that the Commission carefully evaluate its potential impacts on Lovejoy Elementary School, its students and staff, and surrounding neighborhoods before moving forward.

The proposal would amend the City's Comprehensive Plan and rezone approximately 12.36 acres near East Diehl Avenue, East Porter Avenue, East Kenyon Avenue, and Southeast 14th Street to permit a five-story, 110-unit apartment building, along with additional future residential and commercial development.

While the developer has described the project as age-restricted senior housing, the Commission is not voting on a housing concept or marketing plan. The Commission is being asked to approve permanent land use rights and amend the Comprehensive Plan. Once granted, those zoning rights remain with the property regardless of future ownership, market conditions, or future development proposals.

Our primary concern is the immediate proximity of this development to Lovejoy Elementary School.

Any significant increase in residential density adjacent to an elementary school should be supported by detailed studies and analysis. To date, we are unaware of any publicly presented information addressing the impact this proposal may have on student safety, school operations, traffic congestion, pedestrian access, or future school capacity.

We respectfully request answers to the following questions:

- Has a Traffic Impact Study been completed that specifically evaluates school drop-off and pick-up periods?
- Has a Pedestrian Safety Study been completed evaluating children walking and biking to school?
- Has the Des Moines Public School District been formally consulted regarding this proposal?

- Has a School Impact Analysis been completed?
- Has the City evaluated the effect this development could have on future school enrollment and capacity?
- Has emergency vehicle access been evaluated during peak school traffic periods?
- Have school bus circulation and student crossing patterns been analyzed?

Our concerns include:

- Increased traffic entering and exiting the area during school arrival and dismissal times.
- Increased pedestrian conflicts involving children walking and biking to school.
- Additional turning movements and congestion along East Diehl Avenue, East Porter Avenue, Southeast 14th Street, and surrounding residential streets.
- Potential interference with school buses, emergency vehicles, and parent pick-up lines.
- Overflow parking into nearby residential streets and school-adjacent areas.

The proposal includes only 60 parking spaces for 110 apartment units. While this may satisfy minimum zoning requirements, many residents question whether it accurately reflects real-world parking demand. Any overflow parking could create additional congestion and safety concerns in the vicinity of the school.

We are also concerned that the repeated emphasis on "senior housing" may distract from the broader zoning implications. The rezoning request would create permanent development rights that could extend well beyond the current proposal. Future owners may not share the same vision as the current developer, and future uses may create additional impacts on schools and surrounding neighborhoods.

We respectfully ask the Commission to disclose what studies, analyses, and consultations have been completed regarding:

- School safety.
- Traffic impacts during school hours.
- Pedestrian safety.
- School capacity and enrollment impacts.
- Emergency access.
- Parking demand.
- Long-term development rights under the proposed zoning classification.

Given the location of this proposal, immediately adjacent to Lovejoy Elementary School, we believe any approval would be premature without comprehensive data and public review of these issues.

The safety of students, the efficient operation of our schools, and responsible long-term planning should be fully evaluated before any Comprehensive Plan amendment or rezoning request is considered.

We appreciate your time and consideration and respectfully request that these questions be addressed publicly before any recommendation is made regarding ZONG-2026-000013.

Sincerely,

The Jordan Task Force Group
40+ Concerned Neighbors and Growing

From: thejordantaskforce@yahoo.com
To: [Chakraborty, Sreyoshi](#)
Subject: Request for Staff Report and Hearing Packet – ZONG-2026-000013
Date: Thursday, June 18, 2026 10:43:41 AM

This is the first time you received an email from this sender (thejordantaskforce@yahoo.com). Exercise caution when clicking links, opening attachments or taking further action, before validating its authenticity.

Dear Ms. Chakraborty,

I hope you are doing well.

We are a neighborhood task force comprised of nearby residents and property owners who recently received the Notice of Public Hearing regarding Case No. ZONG-2026-000013 concerning the property in the vicinity of 1310 East Diehl Avenue. We would like to review the complete application materials before the June 18 hearing.

Would you please provide the direct link to the staff report, agenda packet, site plans, traffic studies, applicant narrative, environmental and drainage information, and any other documents associated with this case? If the packet has not yet been posted, we would appreciate knowing when it is expected to become available.

As residents and stakeholders in the neighborhood, we are particularly interested in understanding the basis for the requested Comprehensive Plan amendment from Low Density Residential to High Density Residential, as well as the potential impacts on the surrounding residential area, traffic volumes, pedestrian safety, neighborhood infrastructure, stormwater management, and the nearby elementary school.

Our group is committed to being fully informed and participating constructively in the public process. We appreciate your assistance and look forward to reviewing the materials so that we may better understand the proposal and its potential impacts on the surrounding community.

Thank you for your time and assistance. We look forward to hearing from you.

Respectfully,
Jordan Task Force

From: thejordantaskforce@yahoo.com
To: [Planning; Chakraborty, Sreyoshi](#)
Cc: [Barron, Rob X.; Westergaard, Linda C.; Mandelbaum, Josh T.; Gatto, Joe P.; Voss, Carl B.; Simonson, Mike W.; Boesen, Connie S.; Jordan Task](#)
Subject: Additional Signatures – Rezoning Application ZONG-2026-000013
Date: Wednesday, July 15, 2026 10:17:24 AM
Attachments: [SIGNED ZONG 2026 000013 OPPOSE JTF.pdf](#)

EXTERNAL EMAIL - This email was sent by a person from outside your organization. Exercise caution when clicking links, opening attachments or taking further action, before validating its authenticity.

Good afternoon,

Attached please find the latest petition containing additional signatures from members of the Jordan Task Force Group who are directly impacted by Rezoning Application ZONG-2026-000013.

We have now received the majority of signatures from neighboring property owners and residents within the official notification area. In addition, many members have advised us that they have already mailed their official protest cards to the City, and we anticipate those will continue to be received over the coming days.

A few members were unavailable when we finalized the attached petition, so there may be a small number of additional signatures submitted prior to tomorrow evening's Planning and Zoning Commission meeting.

We respectfully request that the attached petition and the additional signatures be included as part of the public record and added to the overall count of neighboring property owners and residents who oppose the proposed Comprehensive Plan Amendment and rezoning.

The attached petition reflects the concerns of neighboring property owners and residents who respectfully believe the requested Comprehensive Plan Amendment and rezoning have not been adequately supported by the planning analyses and information necessary to justify permanently changing the land-use designation of this property.

Thank you for your time, your consideration, and your continued service to the City of Des Moines. We appreciate your attention to this matter and respectfully request that the attached petition be included in the record for tomorrow evening's Planning and Zoning Commission meeting.

Respectfully,

The Jordan Task Force Group

IOWA DEPARTMENT OF NATURAL RESOURCES
USER SITE INFORMATION REPORT

This USER Site Information Report has been generated for the COTA INDUSTRIES site located in Des Moines, Iowa, Site ID: U77-0046. If you have any questions regarding the site, please contact Unassigned, IDNR Project Manager, at .

About the USER Site Information Report

The USER Site Information Report is a compilation of the data entered by the Iowa Department of Natural Resources Uncontrolled Sites and Emergency Response staff. Sites are categorized by a unique identifier known as a Site ID. The number of USER sites entered into the database to date is 516.

The report is divided into four parts:

Part 1: General Site Information

Part 2: Regulatory Action

Part 3: Work Plans & Site Reports

Part 4: State Registry Sites

CON 12-15
Doc #20342

Part 1 of the USER Site Report provides general information for a given site, such as the address, site name aliases, site background information, EPA and spill numbers, topographical map locaters, and site contacts. Also included in this segment of the report is site contamination information which identifies site contaminants detected in various media at the site, sources of the contaminants, source locations, and areas potentially impacted by the site.

Part 2 of the USER Site Report identifies regulatory activities taking place at a site. The status of those activities are also provided. The report is divided into four segments according to the regulatory activity: State Action, Assessment/Remedial Action, Consent and Administrative Orders, Record of Decisions, and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

Part 3 of the USER Site Report is comprised of any work plans or site reports submitted to the IDNR. Information is provided on the number of work plans or reports associated with a site, when they were received by the IDNR, reviewed, responded to, and approved. Some reports are submitted for IDNR records and not necessarily for Department review.

Part 4 of the USER Site Report is the status of a site if it is on the State Registry or has become a candidate for the Registry. Status information may include the eligibility of the site for the Registry, when it was added or removed from the Registry, and its site classification. The site classification is designated by the letters A through E, with "A" indicating immediate action is required at the site and "E" indicating no further action is required.

Disclaimer : The Iowa Department of Natural Resources (IDNR) is not responsible for inaccurate data provided in the USER Site Information Report. Most of the data entered in the USER database is a summary of information located in the IDNR files. Material in the files consists of correspondence between the IDNR and the public, reports generated by the IDNR Central and Field Office staff, work plans and reports prepared by environmental consultants for their clients, laboratory analytical data, non-laboratory data, complaints by the public, etc. Some of the data has not been verified. If you discover any information that is entered incorrectly, please notify one of the following:

1. The IDNR Project Manager identified at the beginning of the report
2. Cal Lundberg Contaminated Sites Supervisor, 515/281-7040
3. Tim Hall, Geology and Land Quality Bureau Chief, 515/281-8169



Uncontrolled
Sites &
Emergency
Response

SITE INFORMATION REPORT

Part 1: General Site Information

SiteID **U77-0046**

Site Name COTA INDUSTRIES

Other Name(s): Cota Exterior Systems
Exterior Systems

Spill #'s:

EPA ID: IA0001764943

Date Received:

Address

5512 S.E. 14th Street
Des Moines, IA 50320
Polk County
Field Office 5

Site Background: Cota Industries was formed in 1955 and operations at the facility began in 1957. The site contained an old farm house with building constructed behind for the manufacturing operations. Danial Cota owned the facility from 1955 until December 1984 when the company stock was sold to Meredith Stubbe for a promissory note. Ms. Stubbe owned the operation until September 1986 when could not pay off the note. Then the stock was sold to David Skeets and Dana Kelley of Exterior Systems Inc. Ms. Stubbe remained as the facility manager until she was fired in January 1989. All operations ceased in October 1989.

Cota Industries operated as a formulating facility for industrial paints and coatings including bonding/acoustics coatings and pool and paint glaze. After purchase by Exterior Systems, the property was used for storage. The manufacturing process was a mixing and blending operation. A 500-gallon tank and several smaller tanks were positioned under a large mixer. Solvents and powders were mixed to create products. High pressure water was used to clean the tanks. The rinse water poured through a hole in the wall to large open tank which overflowed to the ground. Drums were routinely buried at the site after accumulating to the point of being conspicuous.

The site has been an eyesore, public nuisance and health hazard since the fall of 1989. The department, the help of EPA, attempted to deal with the site from 1989 through 1995. The EPA conducted a site assessment and removal action in 1996. The removal action included the cleanup of the paint spill on the south side of building and the removal various debris and investigation derived waste (15 rolloff boxes to the landfill). The department has an outstanding judgement against Cota (\$8,440 for site costs and \$25,321 in punitive damages). The EPA spent approximately \$177,000 for its activities.

The most obvious contaminated surface soil (paint spill) have been removed. Investigation in 1991 and 1996 did not find evidence of significant subsurface contamination with solvents. However, there has been no groundwater assessment and it is possible there may be significant subsurface contamination with paint solvents.

Site Type: Uncontrolled

SiteID **U77-0046**
Site Name COTA INDUSTRIES
Type Of Ownership Private
Site Origin: IDNR Field Office
Site Location: Commercial
Site Area: 10 Acres
Project Manager Unassigned

Map Location

Quarter:		Latitude:	41°30'12.3"
Section:	27	Longitude:	93°35'05.1"
Township:	T78N		
Range:	R24W		

UTM Coordinates

UTMx	0.00
UTMy	0.00

SiteID

U77-0046

Site Name

COTA INDUSTRIES

Site Contact

PRP
Contact No.

PRP Contact

1

Dan Cota

Former Owner

Cota Industries, Inc.

5512 S.E. 14th Street

Des Moines, IA

Phone 1: (515) 225-7430

Phone 2: (602) 830-0724

Direct Dial: (602) 830-0724

Fax:

PRP
Contact No.

PRP Contact

2

Dana Kelley

Former Owner of Cota

Exterior Systems Inks

13846 Chrisma

Houston, TX 77039

Phone 1: (713) 442-9708

Phone 2:

Direct Dial:

Fax:

SiteID **U77-0046**

Site Name COTA INDUSTRIES

Site Contamination

Type of Industries that have operated at the facility include: Paint Manufacturing

Type of Contamination detected at the site: Inorganic

Metal

Solvent

Medium Impacted Soil

Site Contaminants

Source of Contamination

Source: Handling Practices

Dump

Drums

Source Location: Onsite

Description of Source Location: Paint spill area cleanup in 1996.

Drum disposal areas remain in place.

Nearby Areas Impacted or Potentially Impacted by the Site: Evidence of contamination but not at high levels.



Uncontrolled
Sites &
Emergency
Response

SITE INFORMATION REPORT

Part 2: Regulatory Action

Site ID **U77-0046**
Site Name COTA INDUSTRIES

Regulatory Action

Lead Agency: EPA

Regulatory Action: 455B.381(4) & (8) Haz. Cond.
CERCLA

State Action

Assessment/Remedial

<u>Removal Action Status</u>	<u>Description of Removal Action</u>
Action completed	

Remedial Operable Units

Consent Order

Site ID U77-0046
Site Name COTA INDUSTRIES

Administrative Orders (AO)

Record of Decision (ROD) Operable Units

CERCLA Action

SI Anticipated Completion Date:

SI Completion Date: 03/07/1997

No Further Action Date: 03/10/1997

Reason For No Further Action: No further action appropriate under CERCLA.



Uncontrolled
Sites &
Emergency
Response

SITE INFORMATION REPORT

Part 3: Work Plans and Site Reports

SiteID **U77-0046**
SiteName COTA INDUSTRIES

Work Plans

Site Reports

Report No.	Year	Report Type	Report Title	Due	Due Date Extension	Received	Comment Letter Sent	Approved
1	1990	TECHMEM	Field Office Report of Investigation for Cota Industries			03/19/1990		
2	1990	TECHMEM	Reprot of RCRA Compliance Inspection at Cota Industries			10/01/1990		
3	1991	SAR	Site Assessment: Geophysical Survey for Cota Drum Site			06/01/1991		
4	1991	TECHMEM	April 1991 Trip Report for Cota Industries			06/10/1991		
5	1991	SAR	September 1991 Report of Site Assessment: Cota Industries			11/01/1991		
6	1997	PA/SI	Site Inspection Report for Cota Drum Site			05/01/1997		

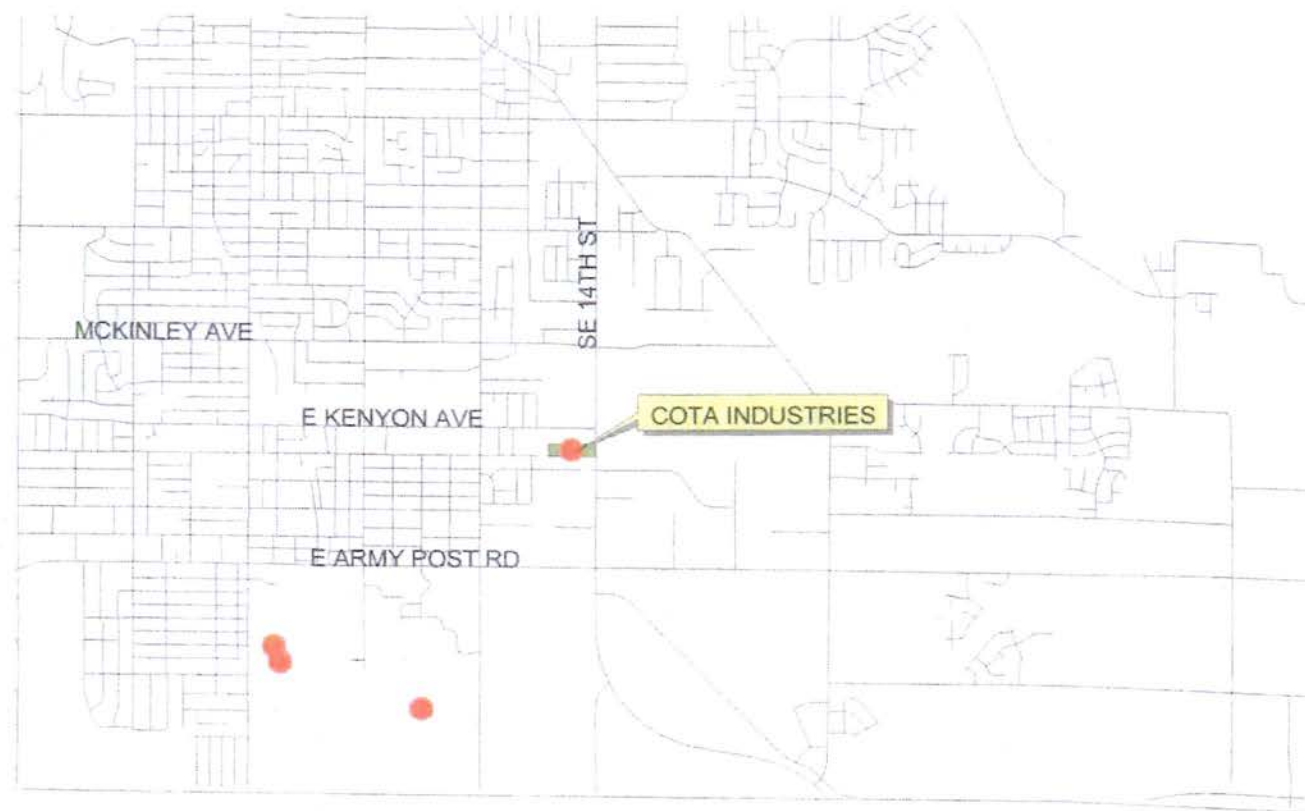


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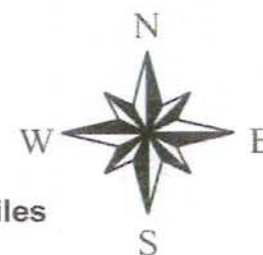
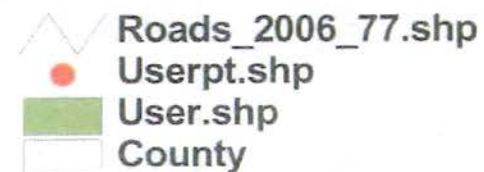
SITE INFORMATION REPORT

Part 4: State Registry Site

Site ID	U77-0046
Site Name	COTA INDUSTRIES
Priority Eligibility Review:	Medium
Eligibility Determination:	
Eligibility Determination Date:	
Site Registry Status:	
Date Added Registry:	
Date Removed Registry:	
Site Classification:	



Cota Industries Des Moines





ecology and environment, inc.

CLOVERLEAF BUILDING 3, 6405 METCALF, OVERLAND PARK, KANSAS 66202, TEL. 913/432-9961

International Specialists in the Environment

MEMORANDUM

TO: Paul Doherty, EPA/DPO

FROM: Joe Parish, E & E/TAT JMF

THRU: Joe Chandler, E & E/TAT JFC

DATE: November 7, 1991

SUBJECT: Data Summary: Cota Drum Site, Des Moines, IA
TDD#: T07-9110-016
PAN#: EIA0160QAA
OSC: Mark Roberts

INTRODUCTION

The Ecology and Environment, Inc., Technical Assistance Team (TAT) was tasked under TDD# T07-9105-039B to conduct a site assessment at the Cota Drum Site, Des Moines, Iowa. The site assessment included exploratory trenching and sampling of waste material and soils to determine the presence of hazardous wastes and/or materials. A trip report was submitted under TDD# T07-9105-039B (Ref. 1) detailing site activity. Validated sample results were not available at the time the trip report was submitted, therefore, the deliverable under this TDD represents the data summary and data validation package.

As discussed in the exploratory trenching TAT trip report, the project goal was to gather evidence to support a state-led enforcement case against the potentially responsible parties. Three objectives were cited to accomplish this goal:

- Objective 1. To determine whether buried wastes are present in the anomalous areas identified during the geophysical survey.
- Objective 2. To determine whether the burial wastes are hazardous substances and/or wastes.
- Objective 3. To determine whether hazardous substances and/or wastes have been released into the environment.

As discussed in the trip report, Objective 1 was met by the exploratory trenching and sampling operation based on the geophysical survey. Site observation alone confirmed the presence of buried wastes. Objectives 2 and 3, however, could not be fully met until the review process for the analytical results was completed. The data does indeed indicate that

some of the burial wastes are hazardous and that there has been a degree of contaminant migration into the environment. A complete discussion follows.

ANALYTICAL RESULTS

The analytical results are enclosed as Attachment 3 to this report. The results considered significant are given in Table 1 (Attachment 2). For convenience, the HAZCAT results and sampling summary from the trip report (Table 2 and 3) are also included. Table 1 includes the results considered of primary interest based on historical site data and site background characteristics.

As shown in Table 1, all of these compounds, including formaldehyde, were detected at various levels in one or more of the samples. For comparison purposes, partial results from the IDNR investigation (Ref. 2) are included in Section D of Table 1. These are considered background, because the samples were taken by the IDNR on the southern border of the site, several hundred feet from the burial and spill areas (see attached Site Map).

Two, possibly three of the soil samples were found to contain mercury at levels exceeding the assumed background level of 1 mg/kg (Table 1-D). A level of 16 mg/kg was detected in CDS-022 and an estimated level of 9.0 mg/kg was detected in sample CDS-023. These samples came from the spill area and former drum storage area respectively. Sample CDS-016, from the spoil pile of trench TR3 (Site Map), showed an estimated level of 4.3 mg/kg. CDS-017, a duplicate of CDS-016, however, only showed an estimated level of 0.65 mg/kg, within the background range. Since both of these were estimated values, it can be surmised that mercury was qualitatively detected in the trench but may or may not be above the background range. Conclusively, the spill area and former staging area (Site Map) are the primary areas of concern for mercury contamination.

Lead was detected in nearly every sample taken by both the HAZCAT operation (Table 2.) and the laboratory analysis. Most of the reporting values were at low levels, however, so the HAZCAT results are likely due to false positives or interference at these concentrations. The highest value in the soils was 110 mg/kg found in sample CDS-023 taken from the former drum storage area, while the highest concentration in the sludges was 260 mg/kg from sample CDS-019 from trench TR3. Lead was detected at a value of 35 µg/L in one drum sample (liquid matrix, CDS-013). The drum was believed (after evaluation of the results) to contain water from run-off.

Cadmium was detected in sample CDS-019, a sludge from trench TR3 at a value of 33 mg/kg. The highest level in any of the soils was detected in sample CDS-016 and its duplicate CDS-017, a composite of the spoil pile of trench TR3, at values of 6.3 and 11 mg/kg respectively. The background level of cadmium in soils was reported to be less than 2 mg/kg (Table 1-D).

The highest level of zinc was found in sample CDS-022 taken from

the spill area at 1500 mg/kg. This value is many times higher than the soils collected in the area.

Several other metals were detected at trace amounts or within the naturally occurring range (Ref. 3). Not surprisingly, only a sludge sample, CDS-019, showed values of magnesium exceeding naturally occurring concentrations.

Unexpectedly, only a trace amount of asbestos type II was detected in one sample, CDS-015, a sludge from trench TR3. The other samples analyzed for asbestos included CDS-001, CDS-004, CDS-022, and CDS-023. These samples tested non-detect for asbestos, even though there were fibers observed in the samples when they were taken, and the HAZCAT gave positive results for asbestos type I in CDS-001 and CDS-004 (Table 2). The positive HAZCAT results may be attributed to the high levels of iron in the samples, since the HAZCAT tests indirectly for asbestos by testing for the iron oxides commonly associated with asbestos type I. It is not known what the fibers are, though they were assumed to be asbestos. Since the historical evidence strongly suggests that asbestos was buried on site, further sampling and/or laboratory analysis may be considered.

There were several volatile and semi-volatile organic compounds detected. Some of the sludges had high levels of toluene, xylenes and other organics. In samples CDS-020, a paint sludge taken from trench TR4 (see Site Map), toluene was detected at 170000 mg/kg and 4-methyl-2-pentanone at 31000 mg/kg. Toluene was detected at an estimated value of 4600 µg/kg in sample CDS-021, another sludge sampled from TR-4. Toluene and 4-methyl-2-pentanone are used as solvents in the coating industry. In sludge sample CDS-006, xylenes were detected at 5900 µg/kg and toluene at 5000 µg/kg. Xylenes were detected at 11000 µg/kg in sludge sample CDS-009. Xylenes were detected in drum sample CDS-012 at 20000 µg/L and in drum sample CDS-008, xylenes were detected at 1900 µg/L and toluene at 520 µg/L. Benzene was detected at an estimated 19000 µg/kg in sludge sample CDS-021. Other compounds detected in the sludges and drum samples included acetone at an estimated concentrations of 200 µg/L, ethylbenzene at 5100 µg/kg, methyl ethyl ketone (MEK or 2-butanone) at an estimated concentrations of 360 µg/L, and 1,2-dichloroethane at 1400 µg/L.

The detection of trace amounts of organics in the soil samples (see Table 1.), particularly those from the trench bottoms, is significant because it indicates the potential for contaminant migration. Toluene was found in sample CDS-018 at 19 µg/kg, an in-situ composite taken from the bottom of trench TR3 approximately three feet below the visible disposal level. It should be noted that toluene and xylenes were also detected in one of the background samples at 44 µg/L and 29 µg/L respectively. This is considered an anomaly, however, since all other background values are below the detection limit or at trace amounts. Also detected in sample CDS-018 was 4-methyl-2-pentanone at an estimated 160 µg/kg. Relatively high levels of the semi-volatile compound bis(2-ethylhexyl)phthalate was detected in samples CDS-003 and CDS-010, collected from the bottom of trench TR1 and TR2 respectively; both were reported at an estimated 1600 µg/kg.

Formaldehyde was qualitatively found in all three soils taken from the spoil piles (samples CDS-005, 011, and 016) and possibly from the bottom of trench TR2. The values given in Table 1 for concentrations of formaldehyde are estimates, since the analysis of the samples exceeded the holding times and did not meet CLP criteria. The lab considers the detection limit to be 1.1 mg/kg based on analytical results of the TCLP blank (Ref. 4). Consequently, only samples CDS-005, CDS-011, and CDS-016 are considered by the lab to positively show formaldehyde contamination on a qualitative basis. Since CDS-010 shows a level just above the alleged detection limit, it is not certain whether or not this sample actually had formaldehyde.

CONCLUSION

As previously discussed, the three objectives of the exploratory trenching were met.

The first objective was to determine whether buried wastes were present in the anomalous areas identified during the geophysical survey. The exploratory trenching operation did uncover buried wastes in all areas explored. The buried wastes included scrap metal, trash, and deteriorated metal and plastic drums and sacks, some of which contained sludges.

The second objective was to determine whether the burial wastes are hazardous substances. The analytical results of sludges and soil did indicate that some of the burial wastes are hazardous substances. Some of the sludges contained toluene, benzene, xylenes, and phenols, all known to be hazardous. Some of the soils contained mercury above the assumed background level.

The third objective was to determine whether hazardous substances and/or wastes have migrated into the environment. The reported results did indicate that trace amounts of organics have migrated below the disposal area. These organics include toluene, xylenes, 4-methyl-2-pentanone, bis(2-ethylhexyl)phthalate and formaldehyde.

ATTACHMENTS

Tables 1-3
Site Map
Review of CLP Data

REFERENCES

1. TAT Trip Report, Cota Site Assessment, Des Moines, Iowa, TDD# T07-9105-039B, Wood Ramsey OSC.
2. Iowa Department of Natural Resources, July, 1991, Analytical Results of IDNR Perimeter soil sampling, from the University of Iowa Analytical Services.
3. McClannahan, Mark, 1984, "Median Elemental Composition of Soils", Table in memorandum to Superfund field staff from Department of Health & Human Resources dated January 17, 1985.
4. Harper, Jim, & Claire Ferguson, personal communication, August 29, 1991, Mid-Pacific Environmental Laboratory, Mountain View, CA (Cota Drum Site contract laboratory).
5. The Merck Index, 11th edition, 1989, Merck & Co., Inc., Rahway, New Jersey.

TABLES 1-3
Cota Drum Site

EM00160QAA/9110016

TABLE 1. Summary of Significant Results

A. Sludges

		CDS-001	CDS-002	CDS-004	CDS-006	CDS-007	CDS-009	CDS-015	CDS-019	CDS-020	CDS-021
ASBESTOS	%	U	NA	U	NA	NA	NA	TR	NA	NA	NA
BARIUM	mg/kg	NA	U	U	200	U	U	U	1100	U	U
CADMIUM	mg/kg	NA	U	U	U	U	6.0	U	33	U	U
LEAD	mg/kg	NA	13	36	19	46	28	8	260	U	U
MERCURY	mg/kg	NA	0.43	0.21	0.27	1.18	4.6	1.5	5.2	U	0.46
ZINC	mg/kg	NA	U	U	54	35	130	22	290	U	U
TOLUENE	µg/kg	NA	NA	NA	5000	880000	U	NA	NA	17E7	4600(J)
4-METHYL-2-PENTANONE	µg/kg	NA	NA	NA	U	U	U	NA	NA	31E6	UJ
XYLENES	µg/kg	NA	NA	NA	5900	U	11000	NA	NA	U	UJ
BENZENE	µg/kg	NA	NA	NA	U	U	U	NA	NA	U	19000(J)

B. Liquids, Drum Samples

		CDS-006	CDS-012	CDS-013
ACETONE	µg/L	U	U	200(J)
LEAD	µg/L	U	U	35
ZINC	µg/L	U	U	340
TOLUENE	µg/L	520	U	58(J)
ETHYLBENZENE	µg/L	180	5100	UJ
XYLENES	µg/L	1900	20000	UJ
METHYL ETHYL KETONE	µg/L	U	U	360(J)
1,2-DICHLOROETHANE	µg/L	1400	U	UJ
4-METHYL-2-PENTANONE	µg/L	180	U	160(J)
PHENOL	µg/L	R	11000(J)	4600(J)

C. Soils

		CDS-003	CDS-005	CDS-010	CDS-011	CDS-016	CDS-017	CDS-018	CDS-022	CDS-023
ASBESTOS	%	NA	NA	NA	NA	NA	NA	NA	U	U
BARIUM	mg/kg	210	220	U	U	210	238	260	U	260
CADMIUM	mg/kg	U	U	U	U	6.3	11	U	U	6.1
LEAD	mg/kg	27(J)	23(J)	12(J)	28(J)	44(J)	59(J)	11(J)	4.7	110(J)
MERCURY	mg/kg	U	0.25(J)	.2(UJ)	0.73(J)	4.3(J)	0.65(J)	U	16	9.0(J)
ZINC	mg/kg	57	64	27	68	92	155	60	1500	150
TOLUENE	µg/kg	U	U	U	U	U	U	19	NA	NA
XYLENES	µg/L	U	U	U	U	U	U	U	NA	NA
BIS(2-ETHYLHEXYL)										
PHthalATE	µg/kg	1600(J)	U	1600(J)	U	UJ	UJ	U	NA	NA
4-METHYL-2-PENTANONE	µg/kg	U	U	U	U	U	U	160(J)	NA	NA
FORMALDEHYDE	mg/kg	U	2.6	U	7.5	2.6	NA	U	NA	NA

D. Background Soils (from IDNR report, Ref. **)

		1	2	3	4	5	EXPLANATION OF CODES
BARIUM	mg/kg	230	210	210	220	250	NA = Constituent not analyzed
CADMIUM	mg/kg	<2	<2	<2	<2	<2	U = Non-detect
LEAD	mg/kg	28	26	23	17	22	UJ = Constituent may or may not be present
MERCURY	mg/kg	<1	<1	<1	<1	<1	J = Estimated Value
ZINC	mg/kg	64	60	54	57	56	E = Exponential Notation
TOLUENE	µg/kg	<2	2	<2	44	3	R = Analyte rejected
XYLENES	µg/kg	<5	<5	<5	29	<5	
EXTRACTABLE							
HYDROCARBONS	µg/kg	4	5	5	7	8	
ASBESTOS	%	0	0	0	0	0	

TABLE 2. HAZCAT SUMMARY

SAMPLE NO.	DATE/LOCATION	HAZCAT SUMMARY						
		HNU	pH	oxidizer	lead	mercury	asbestos I	asbestos II
CDS-001	7/15/91/TR-1	NT	NT	neg	pos	neg	pos	neg
CDS-002	7/15/91/TR-1	NT	NT	neg	pos	neg	pos	neg
CDS-004	7/15/91/TR-1	NT	NT	neg	pos	neg	pos	neg
CDS-006	7/15/91/TR-2	2	6	neg	inc	neg	NT	NT
CDS-008	7/15/91/TR-2	15	7	neg	pos	neg	NT	NT
CDS-009	7/16/91/TR-2	<1	7	neg	pos	neg	NT	NT
CDS-012	7/16/91/TR-2	25	6	neg	neg	neg	NT	NT
CDS-013	7/16/91/TR-2	NT	9	neg	inc	neg	NT	NT
CDS-014	7/16/91/TR-2	NT	7	neg	inc	inc	NT	NT
CDS-015	7/16/91/TR-3(E-W)	NT	7	neg	pos	neg	NT	NT
CDS-019	7/17/91/TR-3(N-S)	NT	7	pos	pos	neg	inc	neg

EXPLANATION:

All samples were non-reactive in water

All samples were non-combustible

NT = not tested

inc = inconclusive, in most cases due to color of sample

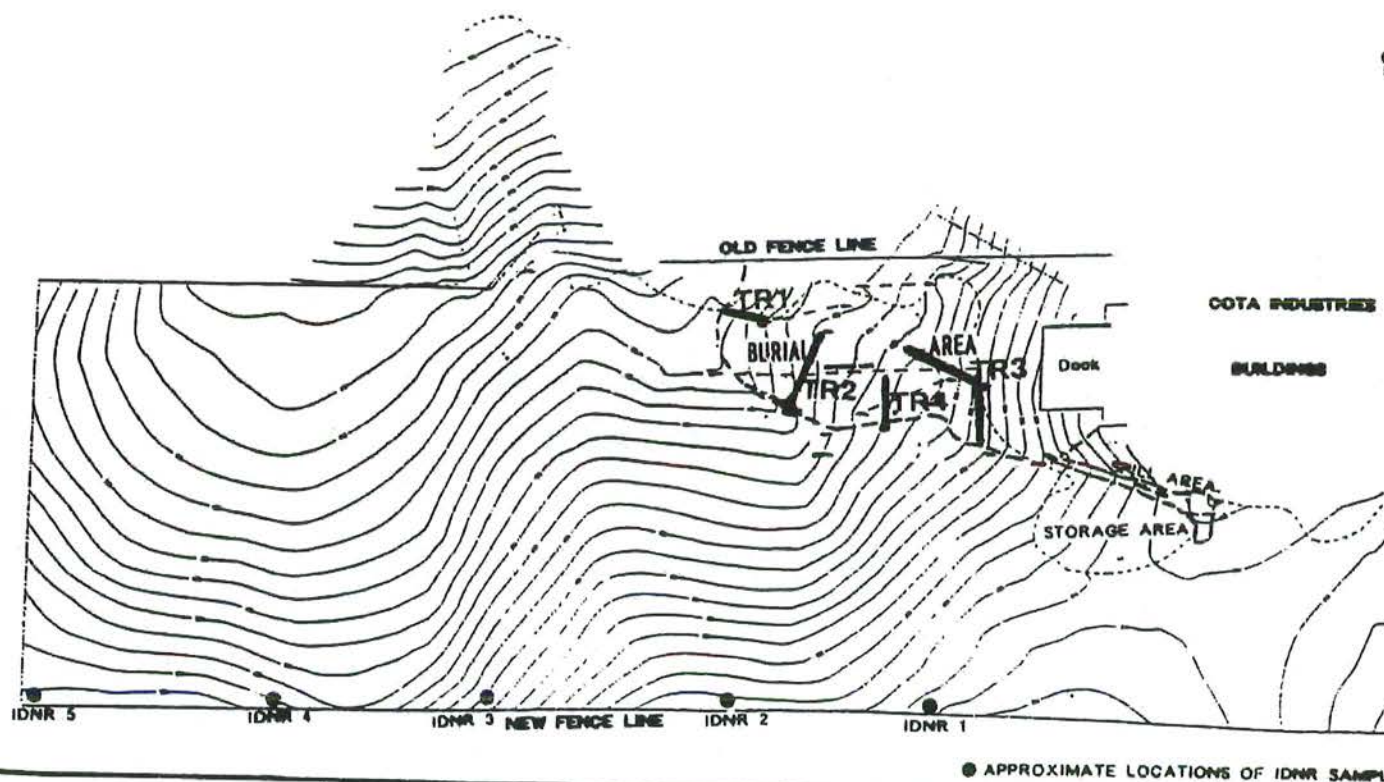
HNU readings in ppm

TABLE 3. SAMPLING SUMMARY

SAMPLE NO.	LOCATION	DESCRIPTION	ANALYSES REQUESTED
CDS-001	TR-1	GRAB, PRODUCT SOLIDS	ASBESTOS
CDS-002	TR-1	COMPOSITE, PRODUCT SOLIDS	TOTAL METALS
CDS-003	TR-1	COMPOSITE, TRENCH BOTTOM AT 6 FEET	BNA, VOAS, TOTAL METALS, FORMALDEHYDE
CDS-004	TR-1	COMPOSITE, PRODUCT SOLIDS	ASBESTOS, TOTAL METALS
CDS-005	TR-1	COMPOSITE OF SPOIL PILE	BNA, VOAS, TOTAL METALS, FORMALDEHYDE
CDS-006	TR-2	COMPOSITE OF DRUM SPILL	BNA, VOAS, TOTAL METALS
CDS-007	TR-2	GRAB, SLUDGE FROM 2 GALLON BUCKET	BNA, VOAS, TOTAL METALS
CDS-008	TR-2	DRUM # TR-2-03	BNA, VOAS, TOTAL METALS
CDS-009	TR-2	GRAB, SLUDGE FROM 5 GALLON DRUM	BNA, VOAS, TOTAL METALS
CDS-010	TR-2	COMPOSITE, TRENCH BOTTOM AT 6 FEET	BNA, VOAS, TOTAL METALS, FORMALDEHYDE
CDS-011	TR-2	COMPOSITE OF SPOIL PILE	BNA, VOAS, TOTAL METALS, FORMALDEHYDE
CDS-012	TR-2	DRUM # TR-2-04	BNA, VOAS, TOTAL METALS
CDS-013	TR-2	DRUM # TR-2-02	BNA, VOAS, TOTAL METALS
CDS-014	TR-2	DRUM # TR-2-01	NOT SUBMITTED FOR ANALYSIS
CDS-015	TR-3(E-W)	GRAB, WHITE POWDER ORIGINALLY IN BAG	ASBESTOS, TOTAL METALS
CDS-016	TR-3(E-W)	COMPOSITE SPOIL PILE	BNA, VOAS, TOTAL METALS, FORMALDEHYDE
CDS-017	TR-3(E-W)	DUPLICATE OF CDS-016	BNA, VOAS, TOTAL METALS
CDS-018	TR-3(E-W)	COMPOSITE, TRENCH BOTTOM AT 6 FEET	BNA, VOAS, TOTAL METALS, FORMALDEHYDE
CDS-019	TR-3(N-S)	GRAB, RED SOLID PRODUCT	TOTAL METALS
CDS-020	TR-4	GRAB, WHITE SEMI-LIQUID, 50 PPM HNU	BNA, VOAS, TOTAL METALS
CDS-021	TR-4	GRAB, GREY-BLUE CRYSTALLINE SUBSTANCE	BNA, VOAS, TOTAL METALS
CDS-022	SPILL AREA	COMPOSITE, PAINT SLUDGE AND SOIL	ASBESTOS, TOTAL METALS
CDS-023	FORMER STAGING AREA	SOIL COMPOSITE	ASBESTOS, TOTAL METALS

SITE MAP
Cota Drum Site

EM00160QAA/9110016



COTA DRUM SITE, POLK COUNTY, DES MOINES

SITE MAP

TDD# T07-9110-016

PAN# EIA-0160-QAA

REVIEW OF CLP DATA

Cota Drum Site

EM00160QAA/9110016



ecology and environment, inc.

CLOVERLEAF BUILDING 3, 6405 METCALF, OVERLAND PARK, KANSAS 66202, TEL. 913/432-9961

International Specialists in the Environment

MEMORANDUM

TO: Paul Doherty, EPA/DPO

FROM: Audra Gier, E & E/TAT *copy*
Janice Frizzell, E & E/TAT *copy*
Dermot Kerin, E & E/TAT

THRU: Joe Chandler, E & E/TATL

DATE: October 30, 1991

SUBJECT: Review of data for Cota Drum samples
TDD#: T07-9110-016
PAN#: EIA0160QAA
EPA OSC: Mark Roberts

cc: Joe Parish, E & E TAT Project Manager

The Ecology & Environment, Inc., Technical Assistance Team (TAT) conducted a review of the analytical data for the samples from the Cota Drum site which were collected under TDD T-07-9105-039B.

Twenty-one samples (one water, eight soils and twelve sludges) were submitted to Mid-Pacific Environmental Laboratory, Inc. in Mountain View, California, for analyses for 23 Target Compound List (TCL) total metals, volatile organic analytes (VOAs) and base/neutral and acid extractable analytes (BNAs or semi-volatiles). TAT conducted a QA2 level review of the data, as described in OSWER Directive 9360.4-01 (Ref. 2), using the guidelines contained in Region VII Standard Operating Procedure (SOP) #1610.2A (Ref. 1). The codes used in conjunction with the data are as follows (Ref. 1 and 2):

- J = The associated value is an estimated quantity because the reported concentrations did not meet quality control criteria.
- R = The sample results are rejected (analyte may or may not be present) due to gross deficiencies in quality control criteria. Any reported value is unusable. Resampling and/or reanalysis is necessary for verification.
- UJ = The material was analyzed for but was not detected. The reported detection limit is estimated because quality control criteria were not met.

U = The material was analyzed for but was not detected above the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

The over-all quality of the data was acceptable. It should be remembered that Contract Laboratory Program (CLP) protocols are intended for soil and water samples and that some of the matrices submitted (i.e. sludges) may be inappropriate for CLP protocols. Possible matrix interference was noted in the all of the analyses as indicated by poor surrogate recoveries, poor matrix-spike recoveries and loss of internal standards.

The samples were originally analyzed according to SW-846 (Ref. 3) methodology and reported under the laboratory's criteria for commercial analyses. Those results were transmitted to the EPA On-Scene Coordinator (OSC) and the TAT Project Manager when they were received by TAT's Analytical Services. Subsequently, a CLP data package was requested. The laboratory submitted the raw data to the CLP software and generated a data package. It was this data package which was reviewed. Data were coded, as described above, using CLP criteria. The regeneration of data had little over-all effect on the results. It should be noted that the original results were uncorrected for percent moisture, which is required by the CLP protocol. The original results are, therefore, somewhat lower than those reported in the CLP package. The detection limits originally reported are also lower than those reported under the CLP protocol because of differences in the quality control criteria used by the laboratory for commercial analyses and those required under CLP protocols.

Surrogate recoveries for several samples analyzed for BNAs were sufficiently poor to require qualification or rejection of data under the CLP protocol. The reviewer also applied these criteria to the BNA data originally reported and qualified or rejected values for those samples. These samples were the only data reviewed from the originally reported results for BNAs.

The original VOA data contained incorrect values for sample 020. The laboratory erroneously reported them as ug/mg instead of mg/kg. Therefore, the original data were under-reported by a factor of 1000. The original data for that sample was rejected, as is indicated on the attached data tables. The CLP values are correctly reported.

All laboratory data reviewed will be filed in the TAT files and will be available if needed. If E & E TAT can be of further assistance to EPA, please contact us.

APPENDIX

A. Review of Data for Total Metals and Data Summary Tables with Review Codes

B. Review of Data for Volatile Organic Analytes and Data Summary Tables with Review Codes

C. Review of Data for Semi-Volatile Organic Analytes and Data Summary Tables with Review Codes

REFERENCES

1. USEPA, Region VII Environmental Services Division, Operations & Quality Assurance Manual. Procedures referenced by SOP #:

#1610.3A: USEPA Hazardous Site Evaluation Division, "Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses", July 1, 1988, revision.

#1610.4A: USEPA Hazardous Site Evaluation Division, "Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses", February 1, 1988, revision.
2. USEPA, Office of Solid Waste and Emergency Response, OSWER Directive 9360.4-01, Quality Assurance/Quality Control Guidance for Removal Activities, April 1990, Washington, DC, EPA/540/G-90/004.
3. USEPA, Office of Solid Waste and Emergency Response, Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Washington, DC, November 1986.

APPENDIX A

Review of Data for Total Metals

COTA DRUM SITE

EIA0160QAA/9110016

**COTA DRUM SITE
Review of Data for Total Metals**

Reviewed by: Janice Frizzell, E & E TAT
Date: October 12, 1991

These data were reviewed according to the "Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses", July 1, 1988, revision (Ref. 1). CLP protocol was requested and followed for total metals in water and soils.

Laboratory: Mid-Pacific Environmental Laboratory, Inc., Mountain View, California

Analysis: 23 TCL total metals

Matrix: Water

Samples: CDS008, 012, 013 (Even though these samples were all run as waters, only CDS008 was identified as a water sample on the Chain-of-Custody form.

Matrix: Soil

Samples: CDS003, 005, 010, 011, 016, 017, 018, 023

Matrix: Sludge

Samples: CDS002, 004, 006, 007, 009, 015, 019, 020, 021, 022

HOLDING TIMES

All required holding times for metals were met.

CALIBRATION

The correct number of blanks and standards were run for each of the analyses. All of the correlation coefficients met criteria. All analytical results for the initial and continuing calibration verification standards (ICV and CCV) were within control limits except sodium, which is J-coded as an estimated value.

BLANKS

All blanks were analyzed at appropriate intervals. Two of the continuing calibration blanks run by Inductively Coupled Plasma (ICP) analysis had potassium levels above the Instrument Detection Level (IDL) but below the reported sample results. No action was taken.

ICP INTERFERENCE CHECK SAMPLE (ICS)

All ICS results fell within required control limits, and ICSs were run at appropriate intervals. The calculations checked for ICS percent Recovery (%R) were correctly reported.

LABORATORY CONTROL SAMPLE (LCS)

All aqueous and solid LCS results fell within required control limits. The calculations checked for LCS %R were correctly reported.

DUPLICATE SAMPLE ANALYSIS

All water and soil sample matrices were J-coded as estimated values for the following analytes which fell outside appropriate control windows:

Water: Samples CDS008, 012, 013 were J-coded for iron only.

Soil: All soil samples were J-coded for manganese, mercury, aluminum, chromium, lead, potassium, sodium and vanadium.

All other analytes were within required control windows. The calculations checked for Relative Percent Difference (RPD) were correctly reported.

MATRIX SPIKE SAMPLE ANALYSIS

Samples CDS003 and CDS018 contained several analytes which were qualified for failing to meet quality control criteria. Antimony and selenium in CDS003 were UJ-coded as estimated but not detected. Arsenic, lead, manganese, and selenium in CDS018 were J-coded as estimated values. All other analytes met control criteria for these analyses. The calculations checked for (%R) were correctly reported. Because CLP protocol was not requested originally, post-digestion spikes, required under CLP protocol, were not run on analytes that did not meet control requirements.

FURNACE ATOMIC ABSORPTION QC

All soil samples were analyzed using Inductively Coupled Argon Plasma spectroscopy or Atomic Absorption spectrophotometry following EPA methodology, which was indicated in the original report. Since CLP protocol was not requested originally, duplicate injections, furnace-post-digestion spikes, and Method of Standard Additions (MSA) were not run for these analyses.

ICP SERIAL DILUTION

Samples CDS003 and CDS022 had several analytes which were J-coded for failing to meet criteria for ICP serial dilution. Aluminum, barium, calcium, iron, magnesium, and manganese were J-coded in CDS003. Aluminum, calcium, iron, and zinc were J-coded in CDS022. All other analytes met criteria. No evidence of negative interference was found in the dilutions. The calculations checked for percent Difference (%D) were correctly reported.

SAMPLE RESULT VERIFICATIONS

Any discrepancies found in the raw data or in transcription were resolved through contact with the laboratory. No ICP results were used for final sample-result reports of arsenic, thallium, selenium, or lead.

FIELD DUPLICATES

Field duplicate analyses results are comparable for samples CDS016 and CDS017 which were the only field duplicates submitted.

OVER-ALL ASSESSMENT OF DATA

The over-all quality of the data for the metals analyses is acceptable, based on matrix spike and other QA/QC results. The originally reported

values were not corrected for percent moisture. They are reported as lower than the values listed on the CLP forms, which were corrected for percent moisture. The attached data summary tables show both the data originally reported and the CLP data. Only the CLP data were reviewed.

REFERENCES

References are those listed in the memorandum to which this report is attached.

TOTAL METALS RESIDUES

October 1991

The following codes were used in reviewing the data:

J = The associated value is an estimated quantity because the reported concentrations did not meet quality control criteria.

N/A = Data are not available for this compound.

R = The sample results are rejected (analyte may or may not be present) due to gross deficiencies in quality control criteria. unusable. Resampling and/or reanalysis is necessary for verification.

UJ = The material was analyzed for but was not detected. The reported detection limit is estimated because quality control criteria were not met.
U = The material was analyzed for but was not detected. The associated value is either the sample quantitation limit or the sample detection limit.

CLP non-detect values are contract required detection limits (CRDL). Positive CLP values are given to two significant figures. (available in TAT files. The data originally submitted by the Laboratory were not reviewed, are reported above as received from the percent moisture.

COTA DRUM SITE
TOTAL METALS RESULTS (Continued)
October 1991

	CDS-009		CDS-010		CDS-011		CDS-012		CDS-013		CDS-015	
	CLP mg/kg	Orig.	CLP mg/kg	Orig.	CLP mg/kg	Orig.	CLP ug/L	Orig.	CLP ug/L	Orig.	CLP mg/kg	Orig.
Aluminum	4200	1140	11000 J	7990	9300 J	6880	1000 U	<250	3300	3260	7000	0
Antimony	60 U	<10	60 U	<10	60 U	<10	300 U	<453	360	<10	60 U	51
Arsenic	10 U	<1.0	10 U	6.4	10 U	4.3	50 U	<25	50 U	46.7	10 U	<1
Barium	200 U	29.9	200 U	119	200 U	130	1000 U	<50	1000 U	232	200 U	35
Beryllium	5 U	<1.0	5 U	<1.0	5 U	<1.0	25 U	<25	25 U	<25	5 U	<1
Cadmium	6.0	1.3	5 U	<1.0	5 U	<1.0	25 U	<25	54	54.5	5 U	1
Calcium	5000 U	1050	5000 U	2150	5600	4140	25000 U	3350	9700	97200	110000	496
Chromium	10 U	2.1	10 J	7.3	12 J	8.5	50 U	<50	50 U	<50	47	39
Cobalt	50 U	<2.0	10 U	7.2	50 U	7.1	250 U	<50	250 U	155	50 U	4
Copper	25 U	4.4	256	7.5	25 U	17.3	190	190	650	650	25 U	3
Iron	10000 U	2580	23000	16100	17000	11700	58000 J	58400	2900000	2920000	3600	286
Lead	28	7.6	12 J	8.8	28 J	20.8	15 U	7.2	35	35.0	8.0	6
Magnesium	5000 U	292	5000 U	1650	5000 U	1980	5000 U	489	13000	13000	7900	698
Manganese	360	96.0	290 J	217	570 J	420	260	265	10000	10200	260	22
Mercury	4.6	1.2	0.2 UJ	<0.1	0.73 J	0.54	1.0 U	<1.0	1.0 U	<1.0	1.5	1.1
Nickel	40 U	<4.0	40 U	10.6	40 U	14.7	200 U	<100	760	760	42	34.1
Potassium	5000 U	314	5000 U	540	5000 J	1200	25000 U	600	25000	7900	5000 U	801
Selenium	7.4	<1.0	5 U	<1.0	5 U	<1.0	25 U	<25	25 U	<25	5 U	<1.0
Silver	10	<2.0	10 U	<2.0	10 U	<2.0	50 U	<50	50 U	<50	10	<2.0
Sodium	5000 U	218	5000 U	227	5000 U	266	25000 U	<500	25000	8930	5000 U	1050
Thallium	10 U	<1.0	10 U	<1.0	10 U	<1.0	50 U	<25	50 U	<25	10 U	<1.0
Vanadium	50 U	3.5	50 U	24.2	50 U	24.9	250 U	<50	250 U	85.5	50 U	4.7
Zinc	130	32.9	27	19.3	68	48.2	100 U	70.5	340	336	22	17.2

The following codes were used in reviewing the data:

J = The associated value is an estimated quantity because the reported concentrations did not meet quality control criteria.

N/A = Data are not available for this compound.

R = The sample results are rejected (analyte may or may not be present) due to gross deficiencies in quality control criteria. A unusable. Resampling and/or reanalysis is necessary for verification.

UJ = The material was analyzed for but was not detected. The reported detection limit is estimated because quality control criteria were unusable.

U = The material was analyzed for but was not detected. The associated value is either the sample quantitation limit or the sample detection limit (CRDL). Positive CLP values are given to two significant figures. The data originally submitted by the Laboratory were not reviewed, are reported above as received from the percent moisture.

COVA DEEM SITE
TOTAL METALS RESULTS (Continued)
October 1991

	COS-017		COS-018		COS-019		COS-020		COS-021		COS-022	
	CLP	Orig.	CLP	Orig.	CLP	Orig.	CLP	Orig.	CLP	Orig.	CLP	Orig.
	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Aluminum	15000	12600	19000 J	15400	15000	12000	5500	4590	200 U	57.5	3400	334
Antimony	60 U	<10	60 U	<10	60 U	<10	60 U	<10	60 U	<10	60 U	<1
Arsenic	10 U	5.3	10 U	5.3	10 U	4.7	10 U	<1.0	10 U	<1.0	10 U	<1.
Barium	238	202	260	208	1100	905	200 U	<2.0	200 U	<2.0	200 U	9.
Beryllium	5 U	<1.0	5 U	<1.0	5 U	<1.0	5 U	<1.0	5 U	<1.0	5 U	<1.
Cadmium	11	7.9	5 U	<1.0	33	26.6	5 U	<1.0	5 U	<1.0	5 U	<1.
Calcium	7800	6500	5000 U	2840	130000	109000	19000	15700	5000 U	128	71000	7060
Chromium	21 J	17.2	21	17.0	100	85	10 U	<2.0	10 U	<2.0	10 U	<2.
Cobalt	50 U	11.4	50 U	7.8	50 U	13.1	10 U	<2.0	50 U	<2.0	50 U	<2.
Copper	129	115	25 U	11.9	490	402	25 U	<2.0	25 U	<2.0	25 U	3.1
Iron	26000	20500	20000	16400	29000	23600	340 U	282	390	341	1900	1890
Lead	59 J	44.1	11 J	10.3	260	210	3 U	1.3	3 U	<0.1	4.7	4.6
Magnesium	5000 U	2940	5000 U	3170	24000	19300	5000 U	302	5000 U	25.9	5000 U	1130
Manganese	1100 J	926	1100 J	854	630	511	15	12.7	15	4.7	78	77.6
Mercury	0.65 J	0.54	0.2 U	0.16	5.2	4.3	0.2 U	0.14	0.46	0.4	16	16.3
Nickel	40 U	21.8	40 U	20.2	150	122	40 U	<4.0	40 U	<4.0	40 U	<4.0
Potassium	5000 J	2630	5000 U	2670	5000 U	2630	5000 U	594	5000 U	48	5000 U	308
Selenium	5 U	<1.0	5 UJ	<1.0	5 U	<1.0	5 U	<1.0	5 U	<1.0	5 U	<1.0
Silver	5 U	<2.0	10 U	<2.0	10 U	<2.0	10 U	<2.0	5 U	<2.0	10 U	<2.0
Sodium	5000 J	288	5000 U	288	5000 U	514	5000 U	356	5000 U	267	5000 U	312
Thallium	10 U	<1.0	10 U	<1.0	10 U	<1.0	10 U	<1.0	10 U	<1.0	10 U	<1.0
Vanadium	50 U	30.6	50 U	35.5	50 U	22.3	50 U	<2.0	50 U	<2.0	50 U	2.2
Zinc	155	124	60	48.2	290	238	20 U	5.3	20 U	3.3	1500	1510

The following codes were used in reviewing the data:

J = The associated value is an estimated quantity because the reported concentrations did not meet quality control criteria.

N/A = Data are not available for this compound.

R = The sample results are rejected (analyte may or may not be present) due to gross deficiencies in quality control criteria. A unusable. Resampling and/or reanalysis is necessary for verification.

UJ = The material was analyzed for but was not detected. The reported detection limit is estimated because quality control criteria were not met.

U = The material was analyzed for but was not detected. The associated value is either the sample quantitation limit or the sample detection limit.

Note: CLP non-detect values are contract required detection limits (CRDL). Positive CLP values are given to two significant figures. Or, available in TAT files. The data originally submitted by the Laboratory were not reviewed, are reported above as received from the percent moisture.

APPENDIX B

Review of Data for Volatile Organic Compounds

COTA DRUM SITE

COTA DRUM SITE
Review of Data for Analyses for Volatile Organic Compounds

Reviewed by: Dermot Kerin, E & E TAT
Date: October 12, 1991

These data were reviewed according to the Region VII Standard Operating Procedure (SOP) 1610.4A (Ref. 1). The level of review was QA2 as described in OSWER Directive 9360.4-01 (Ref. 2). The following comments, and attached tables of data, are the result of the Ecology & Environment, Inc., Technical Assistance Team (TAT) review of the data for the analyses for volatile organic analytes (VOAs).

Laboratory: Mid-Pacific Environmental Laboratory, Inc. Mountain View, CA

Analyses: Volatile Organic Analytes (VOAs)

Matrix: Solids and Liquids

Sample #: CDS003, 005, 010, 011, 016, 017, 018 were analyzed as low-level soils.

006, 007, 009, 020, 021 were analyzed as medium-level soils.

008, 012, 013 were analyzed as low-level waters.

HOLDING TIMES

The holding times for soils is currently under investigation and the holding times for preserved water samples is 14 days.

Sample 008 was preserved and analyzed as a water sample. The sample was analyzed within the required holding time. Samples 012 and 013 were analyzed as waters but were not preserved because they were collected as liquid-sludge samples.

GC/MS TUNING

Both instruments 150A and 150B passed the ion abundance mass calibration criteria, and all samples were analyzed within the required 12-hour time limit.

CALIBRATION

Initial Calibration

All Relative Response Factors (RRF) were within acceptable limits for both instruments 150A and 150B.

All percent Relative Standard Deviations (%RSD) were within required limits except for chloromethane and acetone on instrument 150A. No samples were effected.

All %RSD were within required limits for instrument 150B.

Continuing Calibration

All RRFs were within required limits.

All %RSD were within required limits for both instruments each day except for:

- 1) Vinyl chloride and acetone on 7-19 on instrument 150A. No samples were effected.
- 2) 2-Butanone on 7-22 on instrument 150A. No samples were effected.
- 3) Chloromethane and chloroethane on 7-24 on instrument 150B. No samples were effected.
- 4) Chloroethane on 7-25 on instrument 150B. No samples were effected.
- 5) 1,1-Dichloroethane and 1-butanone on 7-26 on instrument which effected a J-code for 2-butanone in sample 013.

BLANKS

There was no contamination in any of the blanks except for:

- 1) Acetone and toluene in VBLK05 on 7-19. No samples were effected.
- 2) Methylene chloride and toluene in VBLK03 on 7-23. No samples were effected.

SURROGATE RECOVERY

All three surrogates were recovered within acceptable limits for each sample except toluene-d8 in sample 013 and VBLK07 which effected J-codes for all positive results of sample 013 and UJ-codes for all undetected results in the same two samples.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

All Relative Percent Differences (%RPD) between the matrix spike and matrix spike duplicate recoveries were within advisory limits.

FIELD DUPLICATES

The duplicate sample results are comparable.

INTERNAL STANDARD PERFORMANCE

Internal standard area counts were within advisory limits for all samples.

Retention Times (RT) variences from sample to daily standards were not measured. Compounds were measured in scan numbers.

TCL COMPOUND IDENTIFICATION

Relative Retention Times (RRT) for all compounds in each sample were within advisory limits.

Relative intensities for all ions in the standard mass spectra were within advisory limits.

COMPOUND QUANTITATION AND REPORTED DETECTION LIMITS

The correct internal standards, quantitation ions and RRFs were used to quantitate compounds.

The Contract Required Detection Limits (CRDL) have been adjusted correctly for dilutions and dry weight factors for all samples.

The correct calculations were performed to determine sample concentrations.

TENTATIVELY IDENTIFIED COMPOUNDS

All Tentatively Identified Compounds (TIC) passed ion and intensity criteria. TICs found in VBLK02 and VBLK05 were also found in samples run on the same day.

SYSTEM PERFORMANCE

The system performance appeared to pass minimal performance criteria.

OVER-ALL ASSESSMENT OF DATA FOR VOLATILES

The over-all quality of the data in this package was acceptable. Most of the QA/QC factors were within specifications except where matrix interferences had an effect on surrogate recovery. The units for sample CDS-020 were reported incorrectly on the original reports submitted for results only. The actual units of measurement for this particular sample are mg/kg, not ug/kg, as stated. Therefore, the original data were under-reported by a factor of 1000. The CLP values were correctly reported. The original data were rejected on the attached data summary tables. This was the only examination of the original data done at this time.

REFERENCES

References are those in the memorandum to which this report is attached.

COCA DRUM SITE
VOLATILE ORGANIC RESULTS
October 1991

	COS-003		COS-005		COS-006		COS-007		-
	CLP	Orig.	CLP	Orig.	CLP	Orig.	CLP	Orig.	
	ug/kg		ug/kg		ug/kg		ug/kg		
Chloromethane	13 U	<3	14 U	<3	1500 U	<380	79000 U	<15000	100 U
Bromomethane	13 U	<2	14 U	<2	1500 U	<250	79000 U	<10000	100 U
Vinyl chloride	13 U	<3	14 U	<3	1500 U	<380	79000 U	<15000	100 U
Chloroethane	13 U	<2	14 U	<2	1500 U	<250	79000 U	<10000	100 U
Methylene chloride	13 U	<2	14 U	<2	1500 U	<250	79000 U	<10000	100 U
Acetone	13 U	<5	14 U	<5	1500 U	<630	79000 U	<25000	100 U
Carbon disulfide	13 U	<3	14 U	<3	1500 U	<380	79000 U	<15000	100 U
1,1-Dichloroethene	13 U	<3	14 U	<3	1500 U	<380	79000 U	<15000	100 U
1,1-Dichloroethane	13 U	<3	14 U	<3	1500 U	<380	79000 U	<15000	100 U
1,2-Dichloroethene	13 U	<2	14 U	<2	1500 U	<250	79000 U	<10000	100 U
Chloroform	13 U	<2	14 U	<2	1500 U	<250	79000 U	<10000	100 U
1,2-Dichloroethane	13 U	<2	14 U	<2	1500 U	<250	79000 U	<10000	1400
2-Butanone	13 U	<5	14 U	<5	1500 U	<630	79000 U	<25000	100 U
1,1,1-Trichloroethane	13 U	<3	14 U	<3	1500 U	<380	79000 U	<15000	100 U
Carbon tetrachloride	13 U	<3	14 U	<3	1500 U	<380	79000 U	<15000	100 U
Bromodichloromethane	13 U	<3	14 U	<3	1500 U	<380	79000 U	<15000	100 U
1,2-Dichloropropane	13 U	<3	14 U	<3	1500 U	<380	79000 U	<15000	100 U
cis-1,3-Dichloropropene	13 U	<3	14 U	<3	1500 U	<380	79000 U	<15000	100 U
Trichloroethene	13 U	<2	14 U	<2	1500 U	<380	79000 U	<10000	100 U
Dibromochloromethane	13 U	<2	14 U	<2	1500 U	<250	79000 U	<10000	100 U
1,1,2-Trichloroethane	13 U	<2	14 U	<2	1500 U	<250	79000 U	<10000	100 U
Benzene	13 U	<2	14 U	<2	1500 U	<250	79000 U	<10000	100 U
trans-1,3-Dichloropropene	13 U	<2	14 U	<2	1500 U	<250	79000 U	<10000	100 U
Bromoform	13 U	<2	14 U	<2	1500 U	<250	79000 U	<10000	100 U
4-Methyl-2-Pentanone	13 U	<5	14 U	<5	1500 U	<630	79000 U	<25000	180
2-Hexanone	13 U	<5	14 U	<5	1500 U	<630	79000 U	<25000	100 U

COYA DEEP SITE
VOLATILE ORGANIC RESULTS (Continued)
October 1991

	CDS-003		CDS-005		CDS-006		CDS-007		CLP
	CLP	Orig.	CLP	Orig.	CLP	Orig.	CLP	Orig.	
	ug/kg		ug/kg		ug/kg		ug/kg		
Tetrachloroethene	13 U	<2	14 U	<2	1500 U	<250	79000 U	<10000	100 U
1,1,2,2-Tetrachloroethane	13 U	<3	14 U	<3	1500 U	<380	79000 U	<15000	100 U
Toluene	13 U	<2	14 U	4	5000	4300	880000	54000	520
Chlorobenzene	13 U	<2	14 U	<2	1500 U	<250	79000 U	<10000	100 U
Ethylbenzene	13 U	<2	14 U	<2	1500 U	<250	79000 U	<10000	180
Styrene	13 U	<2	14 U	<2	1500 U	<250	79000 U	<10000	100 U
Xylene (total)	13 U	<2	14 U	<2	5900	4800	79000 U	<10000	1900
Trichlorofluoromethane	N/A	<3	N/A	<3	N/A	<350	N/A	<15000	N/A
Vinyl acetate	N/A	<3	N/A	<5	N/A	<630	N/A	<25000	N/A
2-Chloroethylvinylether	N/A	<5	N/A	<5	N/A	<630	N/A	<25000	N/A

* CLP data are for total 1,2-dichloroethene. Original data are for trans-1,2-Dichloroethene.

The following codes were used in reviewing the data:

- J = The associated value is an estimated quantity because the reported concentrations did not meet quality control criteria.
- N/A = Data are not available for this compound.
- R = The sample results are rejected (analyte may or may not be present) due to gross deficiencies in quality control criteria. value is unusable. Resampling and/or reanalysis is necessary for verification.
- UJ = The material was analyzed for but was not detected. The reported detection limit is estimated because quality control criteria were not met.
- U = The material was analyzed for but was not detected. The associated value is either the sample quantitation limit or the sample detection limit.

Note: CLP non-detect values are contract required detection limits (CRDL). Positive CLP values are given to two significant figures. CLP data are available in TAT files. The data originally submitted by the Laboratory were not reviewed, are reported above as received from the laboratory and are percent moisture.

CUEA DRUM SITE
VOLATILE ORGANIC RESULTS (Continued)
October 1991

	CDS-009 ug/kg		CDS-010 ug/kg		CDS-011 ug/L		CDS-012 ug/kg		C
	CLP	Orig.	CLP	Orig.	CLP	Orig.	CLP	Orig.	CLP
Chloromethane	3200 U	<380	14 U	<3	14 U	<3	2000 U	<600	50 UJ
Bromomethane	3200 U	<250	14 U	<2	14 U	<2	2000 U	<400	50 UJ
Vinyl chloride	3200 U	<380	14 U	<3	14 U	<3	2000 U	<600	50 UJ
Chloroethane	3200 U	<250	14 U	<2	14 U	<2	2000 U	<400	50 UJ
Methylene chloride	3200 U	<250	14 U	<2	14 U	<2	2000 U	<400	50 UJ
Acetone	3200 U	<630	14 U	<5	14 U	<5	2000 U	<1000	200 J
Carbon disulfide	3200 U	<380	14 U	<3	14 U	<3	2000 U	<600	50 UJ
1,1-Dichloroethene	3200 U	<380	14 U	<3	14 U	<3	2000 U	<600	50 UJ
1,1-Dichloroethane	3200 U	<380	14 U	<3	14 U	<3	2000 U	<600	50 UJ
*1,2-Dichloroethene	3200 U	<250	14 U	<2	14 U	<2	2000 U	<400	50 UJ
Chloroform	3200 U	<250	14 U	<2	14 U	<2	2000 U	<400	50 UJ
1,2-Dichloroethane	3200 U	<250	14 U	<2	14 U	<2	2000 U	<400	50 UJ
2-Butanone	3200 U	<630	14 U	<5	14 U	<5	2000 U	<1000	160 J
1,1,1-Trichloroethane	3200 U	<380	14 U	<3	14 U	<3	2000 U	<600	50 UJ
Carbon tetrachloride	3200 U	<380	14 U	<3	14 U	<3	2000 U	<600	50 UJ
Bromodichloromethane	3200 U	<380	14 U	<3	14 U	<3	2000 U	<600	50 UJ
1,2-Dichloropropane	3200 U	<380	14 U	<3	14 U	<3	2000 U	<600	50 UJ
cis-1,3-Dichloropropene	3200 U	<380	14 U	<3	14 U	<3	2000 U	<600	50 UJ
Trichloroethene	3200 U	<250	14 U	6	14 U	<2	2000 U	<400	50 UJ
Dibromochloromethane	3200 U	<250	14 U	<2	14 U	<2	2000 U	<400	50 UJ
1,1,2-Trichloroethane	3200 U	<250	14 U	<2	14 U	<2	2000 U	<400	50 UJ
Benzene	3200 U	<250	14 U	5	14 U	<2	2000 U	<400	50 UJ
trans-1,3-Dichloropropene	3200 U	<250	14 U	<2	14 U	<2	2000 U	<400	50 UJ
Bromoform	3200 U	<250	14 U	<2	14 U	<2	2000 U	<400	50 UJ
4-Methyl-2-Pentanone	3200 U	<630	14 U	<5	14 U	<5	2000 U	<1000	160 J
2-Hexanone	3200 U	<630	14 U	<5	14 U	<5	2000 U	<1000	50 UJ

COZA DRUM SITE
VOLATILE ORGANIC RESULTS (Continued)
October 1991

	CDS-009		CDS-010		CDS-011		CDS-012		C
	CLP	Orig.	CLP	Orig.	CLP	Orig.	CLP	Orig.	
	ug/kg		ug/kg		ug/L		ug/kg		
Tetrachloroethane	3200 U	<250	14 U	<2	14 U	<2	2000 U	<400	50
1,1,2,2-Tetrachloroethane	3200 U	<380	14 U	<3	14 U	<3	2000 U	<600	50
Toluene	3200 U	900	14 U	5	14 U	3	2000 U	1300	58
Chlorobenzene	3200 U	<250	14 U	3	14 U	<2	2000 U	<400	50
Ethylbenzene	3200 U	530	14 U	<2	14 U	<2	5100	5100	50
Styrene	3200 U	<250	14 U	<2	14 U	<2	2000 U	<400	50
Xylene (total)	11000	4100	14 U	<2	14 U	3	20000	19000	50
Trichlorofluoromethane	N/A	<300	N/A	<3	N/A	<3	N/A	<600	N/A
Vinyl Acetate	N/A	<630	N/A	<5	N/A	<5	N/A	<1000	N/A
2-chloroethylvinylether	N/A	<630	N/A	<5	N/A	<5	N/A	<1000	N/A

* CLP data are for 1,2-dichloroethane. Original data are for trans-1,2-dichloroethane.

The following codes were used in reviewing the data:

- J = The associated value is an estimated quantity because the reported concentrations did not meet quality control criteria.
- N/A = Data are not available for this compound.
- R = The sample results are rejected (analyte may or may not be present) due to gross deficiencies in quality control criteria. value is unusable. Resampling and/or reanalysis is necessary for verification.
- UJ = The material was analyzed for but was not detected. The reported detection limit is estimated because quality control criteria were not met.
- U = The material was analyzed for but was not detected. The associated value is either the sample quantitation limit or the sample detection limit.

Note: CLP non-detect values are contract required detection limits (CRDL). Positive CLP values are given to two significant figures. data are available in TAT files. The data originally submitted by the Laboratory were not reviewed, are reported above as received from the laboratory and are percent moisture.

COYA DRUM SITE
VOLATILE ORGANIC RESULTS (Continued)
October 1991

	CDS-016		CDS-017		CDS-018		CDS-020		CLP
	CLP	Orig.	CLP	Orig.	CLP	Orig.	CLP	Orig.	
	ug/kg		ug/kg		ug/kg		ug/kg		
Chloromethane	12 U	<3	12 U	<3	12 U	<3	11000000 U	R	2800 U
Bromomethane	12 U	<2	12 U	<2	12 U	<2	11000000 U	R	2800 U
Vinyl chloride	12 U	<3	12 U	<3	12 U	<3	11000000 U	R	2800 U
Chloroethane	12 U	<2	12 U	<2	12 U	<2	11000000 U	R	2800 U
Methylene chloride	12 U	<2	12 U	4	12 U	<2	11000000 U	R	2800 U
Acetone	12 U	<5	12 U	7	12 U	<5	11000000 U	R	2800 U
Carbon disulfide	12 U	<3	12 U	<3	12 U	<3	11000000 U	R	2800 U
1,1-Dichloroethane	12 U	<3	12 U	<3	12 U	<3	11000000 U	R	2800 U
1,1-Dichloroethane	12 U	<3	12 U	<3	12 U	<3	11000000 U	R	2800 U
1,2-Dichloroethane (total)	12 U	<2	12 U	<2	12 U	<2	11000000 U	R	2800 U
Chloroform	12 U	<2	12 U	<2	12 U	<2	11000000 U	R	2800 U
1,2-Dichloroethane	12 U	<2	12 U	<2	12 U	<2	11000000 U	R	2800 U
2-Butanone	12 U	<5	12 U	<5	12 U	<5	11000000 U	R	2800 U
1,1,1-Trichloroethane	12 U	<3	12 U	<3	12 U	<3	11000000 U	R	2800 U
Carbon tetrachloride	12 U	<3	12 U	<3	12 U	<3	11000000 U	R	2800 U
Bromodichloromethane	12 U	<3	12 U	<3	12 U	<3	11000000 U	R	2800 U
1,2-Dichloropropane	12 U	<3	12 U	<3	12 U	<3	11000000 U	R	2800 U
cis-1,3-Dichloropropene	12 U	<3	12 U	<3	12 U	<3	11000000 U	R	2800 U
Trichloroethene	12 U	<2	12 U	<2	12 U	<2	11000000 U	R	2800 U
Dibromochloromethane	12 U	<2	12 U	<2	12 U	<2	11000000 U	R	2800 U
1,1,2-Trichloroethane	12 U	<2	12 U	<2	12 U	<2	11000000 U	R	2800 U
Benzene	12 U	<2	12 U	<2	12 U	<2	11000000 U	R	19000 J
trans-1,3-Dichloropropene	12 U	<2	12 U	<2	12 U	<2	11000000 U	R	2800 U
Bromoform	12 U	<2	12 U	<2	12 U	<2	11000000 U	R	2800 U
4-Methyl-2-Pentanone	12 U	<5	12 U	<5	160	130	31000000	R	2800 U
2-Hexanone	12 U	<5	12 U	<5	12 U	<5	11000000 U	R	2800 U

COTA DRUM SITE
VOLATILE ORGANIC RESULTS (Continued)
October 1991

	CDS-016		CDS-017		CDS-018		CDS-020		CLP
	CLP	Orig.	CLP	Orig.	CLP	Orig.	CLP	Orig.	
	ug/kg		ug/kg		ug/kg		ug/kg		
Tetrachloroethene	12 U	<2	12 U	<2	12 U	<2	11000000 U	R	2800
1,1,2,2-Tetrachloroethane	12 U	<3	12 U	<3	12 U	<3	11000000 U	R	2800
Toluene	12 U	3	12 U	9	19	15	170000000	R	4600
Chlorobenzene	12 U	<2	12 U	<2	12 U	<2	11000000 U	R	2800
Ethylbenzene	12 U	<2	12 U	<2	12 U	<2	11000000 U	R	2800
Styrene	12 U	<2	12 U	<2	12 U	<2	11000000 U	R	2800
Xylene (total)	12 U	<2	12 U	<2	12 U	<2	11000000 U	R	2800
Trichlorofluoroethane	N/A	<3	N/A	<3	N/A	<3	N/A	R	N/A
Vinylacetate	N/A	<5	N/A	<5	N/A	<5	N/A	R	N/A
2-Chlorovinyl ether	N/A	<5	N/A	<5	N/A	<5	N/A	R	N/A

* CLP data are for 1,2-dichloroethane. Original data are for trans-1,2-dichloroethane.

The following codes were used in reviewing the data:

- J = The associated value is an estimated quantity because the reported concentrations did not meet quality control criteria.
- N/A = Data are not available for this compound.
- R = The sample results are rejected (analyte may or may not be present) due to gross deficiencies in quality control criteria. reported value is unusable. Resampling and/or reanalysis is necessary for verification.
- UJ = The material was analyzed for but was not detected. The reported detection limit is estimated because quality control crit not met.
- U = The material was analyzed for but was not detected. The associated value is either the sample quantitation limit or the sa detection limit.

Note: CLP non-detect values are contract required detection limits (CRDL). Positive CLP values are given to two significant figures. CLP data are available in TAT files. The data originally submitted by the Laboratory were not reviewed, are reported above as re from the laboratory and are percent moisture.

APPENDIX C

Review of Data for Semi-Volatile Organic Compounds

COTA DRUM SITE

EIA0160QAA/9110016

COTA DRUM SITE
Review of Data for Analyses for Semi-Volatile Organic Compounds

Reviewed by: Audra Gier, E & E TAT
Date: October 14, 1991

These data were reviewed according to the Region VII Standard Operating Procedure (SOP) 1610.4A (Ref. 1). The level of review was QA2 as described in OSWER Directive 9360.4-01 (Ref. 2). The following comments, and attached data sheets, are the result of the Ecology & Environment, Inc., Technical Assistance Team (TAT) review of the data for the analysis of base/neutral or acid extractable compounds (BNAs or semi-volatile organic compounds).

Laboratory: Mid-Pacific Environmental Laboratory, Inc. Mountain View, CA

Analyses: Base/Neutral or Acid Extractable Compounds (BNAs or Semi-Volatiles)

Matrix: Solids and Liquids

Sample #: CDS003, 005, 006, 007, 009, 010, 011, 016, 017,
018, 020, 021 were analyzed as soils
008, 012, 013 were analyzed as waters

HOLDING TIMES

Holding times have been established only for water samples. Holding times for soils and solids are under investigation. Although three samples (008, 012 and 013) were treated as waters by the laboratory because they were liquids, only sample 008 was identified as a water on the Chain of Custody (COC). Samples 012 and 013 were identified as drum samples. Samples 008, 012 and 013 were extracted within seven days of collection, which met holding-time requirements.

GCMS TUNING

All ion abundance criteria were met on the day of the initial calibration and for each day that samples were analyzed. All samples were analyzed on the same instrument and were analyzed within the required 12-hour time limit.

CALIBRATION

Initial Calibration

Relative Response Factors (RRFs) were within acceptable limits. Percent Relative Standard Deviations (%RSD) were within acceptable limits except for the following four compounds, which were not found in any of the samples analyzed: 3-nitroaniline, 2,4-dinitrophenol, 4-nitrophenol and 4,6-dinitro-2-methylphenol.

Continuing Calibration

All RRFs were within required limits for each day that samples were analyzed. Most compounds showed percent Differences (%D) between Initial and Continuing Calibrations which were within the required limits. However, for each day, several compounds showed %D greater than 25 per cent. None of these compounds were reported in any of the samples, so no samples were effected.

BLANKS

Blanks were run for each matrix. No contaminants were found in concentrations equal to or greater than the Contract Required Detection Limits (CRDL).

SURROGATE RECOVERY

Surrogate recoveries were outside control limits for several samples. The laboratory found the samples could not be concentrated normally during the extraction process and dilution was required before analysis. Recoveries from the laboratory's control samples (blanks) were within control limits. Poor surrogate recovery requires the reviewer to qualify positive values as estimated values (J) and to qualify compounds that are not detected as having estimated sample quantitation limits (UJ). If surrogate recoveries are less than ten per cent, positive results must be qualified as estimated values (J) and negative results must be designated as unusable (R).

Four soil samples (016, 017, 020 and 021) and the three liquid samples (008, 012 and 013) were effected. Surrogate recoveries for samples 016 and 017 required qualifying all data as estimated values (J). Recoveries for surrogates in samples 020 and 021 and samples 008, 012 and 013 were sufficiently poor (0%-4%) to require rejecting (R) all results for them. It should be noted that the data originally reported by the laboratory under its commercial criteria indicated the same problems with surrogate recoveries and those data are qualified, on the attached data summary tables, according to these same criteria. Only these samples from the original BNA data were evaluated.

MATRIX SPIKE/MATRIX SPIKE DUPLICATES

Matrix spike (MS) and matrix spike duplicate (MSD) samples were run appropriately--one for each matrix. Only one of the eleven compounds in the spiking solution was within Quality Control (QC) limits for percent Recovery (%R) for samples 008MS and 008MSD or for %RSD, confirming the matrix problems indicated by the poor surrogate recoveries.

The soil MS/MSD samples were within QC limits on both %R and %RSD.

FIELD DUPLICATES

On the COC, sample 017 is identified as a duplicate of sample 016. These samples were difficult to extract and required further dilution before analysis, which contributed to the poor surrogate recoveries. The two samples contained different Tentitively Identified Compounds (TICs) except for 1,2-benzene dicarboxylic acid (phthallic acid) which was found in both. No calculation of RPD was attempted.

INTERNAL STANDARDS PERFORMANCE

Retention times (RT), as given on the Semi-Volatile Internal Standard Area and RT Summary (Form VIII), are within control limits. The raw data showed scan numbers instead of RTs.

All internal standard area counts were within the required limits of the associated calibration standard. Area counts were confirmed for each calibration standard for each day and were found to be acceptable. Internal standard area counts for all samples were found to be within acceptable limits except for sample 021 which was below acceptable limits for chrysene-d12 and perylene-d12 and sample 008MSD which was outside limits for all six internal standards. This would qualify all values, positive and non-detect, as estimated quantities for compounds associated with these internal standards.

TCL COMPOUND IDENTIFICATION

All compounds were correctly identified based on examination of RRTs and spectra.

COMPOUND QUANTITATION AND REPORTED DETECTION LIMITS

Compounds were quantitated on the appropriate internal standards, quantitation ions and RRFs. All reported quantitation limits were properly adjusted to reflect sample dilutions, concentration and dry weight factors. Calculations were verified for all positive values.

It should be noted that the laboratory originally reported values which were not corrected for percent moisture. Only two samples were affected: 003 and 010. Originally, each of these samples was reported to contain 1200 ug/kg of bis(2-ethylhexyl)phthalate. When reported on a dry-weight basis, under the CLP protocol, the values were increased to 1600 ug/kg. The original data were reported under the laboratory's commercial protocol.

TENTATIVELY IDENTIFIED COMPOUNDS

All Tentatively Identified Compounds (TICs) passed both ion and intensity criteria. The blank used for the samples analysed as soils contained no TICs. The water blank contained five TICs, none of which were identified in the associated samples. All values for TICs are estimated quantities.

SYSTEM PERFORMANCE

The system performance appeared to pass minimal performance criteria for these samples.

OVER-ALL ASSESSMENT OF DATA

The over-all quality of the data for BNAs (semi-volatile organics) was acceptable. Most of the quality control factors were within required limits except where matrix problems had an effect on surrogate recoveries. Detection levels are elevated for most of the samples because dilutions were required.

The attached data summary tables also reflect both the values which were originally reported by the laboratory and the data later generated under the CLP protocol. The data that were reviewed were the CLP data. For

BNAs, only two positive values were affected, the bis(2-ethylhexyl)phthalate reported for samples 003 and 010. Under CLP protocol, detection levels are higher for all samples than those reported originally. Even though the quantitation limits are different in the two sets of data, they are comparable and the apparent differences seem to result only from the percent moisture correction.

Discussions with laboratory personnel indicated that the original data could also be reviewed under the CLP guidelines (Ref. 1). Therefore, those samples effected by poor surrogate recoveries were reviewed and qualified as indicated on the summary tables attached.

As a result of this review, and for reasons described in this report, all positive values and quantitation limits for several samples reported under the CLP protocol were flagged as estimated values (J-coded). Values for seven samples were rejected because of poor surrogate recoveries.

REFERENCES

See references listed in the cover memorandum accompanying this report.

COVA DEBRIS SITE
SEMI-VOLATILE ORGANIC RESULTS
OCTOBER 1991

	CDS-003		CDS-005		CDS-006		CDS-007		CLP
	CLP	Orig.	CLP	Orig.	CLP	Orig.	CLP	Orig.	
	ug/kg		ug/kg		ug/kg		ug/kg		
Phenol	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Bis(2-chloroethyl)ether	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
2-Chlorophenol	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
1,3-Dichlorobenzene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
1,4-Dichlorobenzene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Benzyl alcohol	N/A	<1300	N/A	<1300	N/A	<6700	N/A	<13000	N/A
1,2-Dichlorobenzene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
2-Methylphenol	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Bis(2-chloroisopropyl)ether	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
4-Methylphenol	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
N-Nitroso-di-n-propylamine	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Hexachloroethane	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Nitrobenzene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Isophorone	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
2-Nitrophenol	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
2,4-Dimethylphenol	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Benzoic acid	N/A	<3400	N/A	<3400	N/A	<17000	N/A	<33000	N/A
Bis(2-chloroethoxy)methane	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
2,4-Dichlorophenol	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
1,2,4-Trichlorobenzene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Naphthalene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
4-Chloroaniline	860 U	<1300	900 U	<1300	4100 U	<6700	11000 U	<13000	R
Hexachlorobutadiene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
4-Chloro-3-methylphenol	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
2-Methylnaphthalene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Hexachlorocyclopentadiene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R

COCA DRUM SITE
SEMI-VOLATILE ORGANIC RESULTS (Continued)
OCTOBER 1991

	CDS-003		CDS-005		CDS-006		CDS-007		CD
	CLP	Orig.	CLP	Orig.	CLP	Orig.	CLP	Orig.	
	ug/kg		ug/kg		ug/kg		ug/kg		
2,4,6-Trichlorophenol	360 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
2,4,5-Trichlorophenol	2100 U	<670	2200 U	<670	10000 U	<3300	26000 U	<6700	R
2-Chloronaphthalene	860 U	<3400	900 U	<3400	4100 U	<17000	11000 U	<33000	R
2-Nitroaniline	2100 U	<3400	2200 U	<3400	10000 U	<17000	26000 U	<33000	R
Dimethylphthalate	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Acenaphthylene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
3-Nitroaniline	2100 U	<3400	2200 U	<3400	10000 U	<17000	26000 U	<33000	R
Acenaphthene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
2,4-Dinitrophenol	2100 U	<3400	2200 U	<3400	10000 U	<17000	26000 U	<33000	R
4-Nitrophenol	2100 U	<3400	2200 U	<3400	10000 U	<17000	26000 U	<33000	R
Dibenzofuran	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
2,4-Dinitrotoluene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
2,6-Dinitrotoluene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Diethylphthalate	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
4-Chlorophenyl-phenylether	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Fluorene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
4-Nitroaniline	2100 U	<3400	2200 U	<3400	10000 U	<17000	26000 U	<33000	R
4,6-Dinitro-2-methylphenol	2100 U	<3400	2200 U	<3400	10000 U	<17000	26000 U	<33000	R
N-Nitrosodiphenylamine	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
4-Bromophenyl-phenylether	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Hexachlorobenzene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Pentachlorophenol	2100 U	<3400	2200 U	<3400	10000 U	<17000	26000 U	<33000	R
Phenanthrene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Anthracene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Carbazole	860 U	N/A	900 U	N/A	4100 U	N/A	11000 U	N/A	R
Di-n-butylphthalate	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R

COTA DEBR SITE
SEMI-VOLATILE ORGANIC RESULTS (Continued)
OCTOBER 1991

	CDS-003		CDS-005		CDS-006		CDS-007		C
	CLP	Orig.	CLP	Orig.	CLP	Orig.	CLP	Orig.	
	ug/kg		ug/kg		ug/kg		ug/kg		
Fluoranthene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Pyrene	360 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Butylbenzylphthalate	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
3,3'-Dichlorobenzidine	860 U	<1300	900 U	<1300	4100 U	<6700	11000 U	<13000	R
Benzo(a)anthracene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Bis(2-ethylhexyl)phthalate	1600 J	1200 J	900 U	<670	4100 U	<3300	11000 U	<6700	R
Chrysene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Di-n-octylphthalate	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Benzo(b)fluoranthene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Benzo(k)fluoranthene	360 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Benzo(a)pyrene	360 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Indeno(1,2,3-cd)pyrene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Dibenzo(a,h)anthracene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Benzo(g,h,i)perylene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R

The following codes were used in reviewing the data:

- J = The associated value is an estimated quantity because the reported concentrations did not meet quality control criteria.
- N/A = Data are not available for this compound.
- R = The sample results are rejected (analyte may or may not be present) due to gross deficiencies in quality control criteria. reported value is unusable. Resampling and/or reanalysis is necessary for verification.
- UJ = The material was analyzed for but was not detected. The reported detection limit is estimated because quality control criteria were not met.
- U = The material was analyzed for but was not detected. The associated value is either the sample quantitation limit or the same detection limit.

Note: CLP non-detect values are contract required detection limits (CRDL). Positive CLP values are given to two significant figures. The original CLP data are available in TAT files. The data originally submitted by the laboratory were not reviewed, are reported as received from the laboratory, and are uncorrected for percent moisture.

CITTA DEEN SITE
SEMI-VOLATILE ORGANIC RESULTS (Continued)
OCTOBER 1991

	CDE-009		CDE-010		CDE-011		CDE-012		CDE-013		CDE-016	
	CLP	Orig.	CLP	Orig.	CLP	Orig.	CLP	Orig.	CLP	Orig.	CLP	Orig.
	ug/kg		ug/kg		ug/kg		ug/L		ug/L		ug/kg	
Phenol	1800 U	<670	920 U	<670	1800 U	<1300	11000 J	R	4600 J	R	820 UJ	6
bis(2-chloroethyl)ether	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	6
2-Chlorophenol	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	6
1,3-Dichlorobenzene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	6
1,4-Dichlorobenzene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	6
Benzyl alcohol	N/A	<1300	920 U	<1300	N/A	<2700	N/A	R	690 J	R	N/A	130
1,2-Dichlorobenzene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	6
2-Methylphenol	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	6
bis(2-chloroisopropyl)ether	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	6
4-Methylphenol	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	6
N-Nitroso-di-n-propylamine	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	6
Hexachloroethane	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	6
Nitrobenzene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	6
Isophorone	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	6
2-Nitrophenol	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	6
2,4-Dimethylphenol	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	6
Benzoic acid	N/A	<3400	N/A	<3400	N/A	<6700	N/A	R	N/A	R	N/A	3400
bis(2-chloroethoxy)methane	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	6
2,4-Dichlorophenol	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	6
1,2,4-Trichlorobenzene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	6
Naphthalene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	6
4-Chloroaniline	1800 U	<1300	920 U	<1300	1800 U	<2700	2700 UJ	R	690 UJ	R	820 UJ	1300
Hexachlorobutadiene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	6
4-Chloro-3-methylphenol	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	6
2-Methylnaphthalene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	6
Hexachlorocyclopentadiene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	6

COFA DEEM SITE
SEMI-VOLATILE ORGANIC RESULTS (Continued)
OCTOBER 1991

	CDS-009		CDS-010		CDS-011		CDS-012		CDS-013		CDS-014	
	CLP	Orig.	CLP	Orig.	CLP	Orig.	CLP	Orig.	CLP	Orig.	CLP	Orig.
2,4,6-Trichlorophenol	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	
2,4,5-Trichlorophenol	4300 U	<670	2200 U	<670	4300 U	<1300	6600 UJ	R	1700 UJ	R	2000 UJ	
2-Chloronaphthalene	1800 U	<3400	920 U	<3400	1800 U	<6700	2700 UJ	R	690 UJ	R	820 UJ	3
2-Nitroaniline	4300 U	<3400	2200 U	<3400	4300 U	<6700	6600 UJ	R	1700 UJ	R	2000 UJ	3
Dimethylphthalate	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	
Acenaphthylene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	
3-Nitroaniline	4300 U	<3400	2200 U	<3400	4300 U	<6700	6600 UJ	R	1700 UJ	R	2000 UJ	3
Acenaphthene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	1
2,4-Dinitrophenol	4300 U	<3400	2200 U	<3400	4300 U	<6700	6600 UJ	R	1700 UJ	R	2000 UJ	34
4-Nitrophenol	4300 U	<3400	2200 U	<3400	4300 U	<6700	6600 UJ	R	1700 UJ	R	2000 UJ	34
Dibenzofuran	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	6
2,4-Dinitrotoluene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	6
2,6-Dinitrotoluene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	6
Diethylphthalate	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	6
4-Chlorophenylphenylether	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	6
Fluorene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	6
4-Nitroaniline	4300 U	<3400	2200 U	<3400	4300 U	<6700	6600 UJ	R	1700 UJ	R	2000 UJ	34
4,6-Dinitro-2-methylphenol	4300 U	<3400	2200 U	<3400	4300 U	<6700	6600 UJ	R	1700 UJ	R	2000 UJ	34
N-Nitrosodiphenylamine	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	67
4-Bromophenyl-phenylether	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	67
Hexachlorobenzene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	67
Pentachlorophenol	4300 U	<3400	2200 U	<3400	4300 U	<6700	6600 UJ	R	1700 UJ	R	2000 UJ	340
Phenanthrene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	67
Anthracene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	67
Carbazole	1800 U	N/A	920 U	N/A	1800 U	N/A	2700 UJ	N/A	690 UJ	N/A	820 UJ	N/A
Di-n-butyl-phthalate	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	67

COCA DRUM SITE
SEMI-VOLATILE ORGANIC RESULTS (Continued)
OCTOBER 1991

	CDS-009		CDS-010		CDS-011		CDS-012		CDS-013		CDS-014	
	CLP	Orig.	CLP	Orig.	CLP	Orig.	CLP	Orig.	CLP	Orig.	CLP	Orig.
Fluoranthene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	6
Pyrene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	6
Butylbenzylphthalate	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	6
3,3'-Dichlorobenzidine	1800 U	<1300	920 U	<1300	1800 U	<2700	2700 UJ	R	690 UJ	R	820 UJ	13
Benzo(a)anthracene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	6
Bis(2-ethylhexyl)phthalate	1800 U	<670	1600 J	1200 J	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	6
Chrysene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	6
Di-n-octyl phthalate	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	6
Benzo(b)fluoranthene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	6
Benzo(k)fluoranthene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	6
Benzo(a)pyrene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	6
Indeno(1,2,3-cd)pyrene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	6
Dibenzo(a,h)anthracene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	6
Benzo(g,h,i)perylene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	6

The following codes were used in reviewing the data:

- J = The associated value is an estimated quantity because the reported concentrations did not meet quality control criteria.
- N/A = Data are not available for this compound.
- R = The sample results are rejected (analyte may or may not be present) due to gross deficiencies in quality control criteria. value is unusable.
- Resampling and/or reanalysis is necessary for verification.
- UJ = The material was analyzed for but was not detected. The reported detection limit is estimated because quality control criteria were not met.
- U = The material was analyzed for but was not detected. The associated value is either the sample quantitation limit or the sample limit.

Note: CLP non-detect values are contract required detection limits (CRDL). Positive CLP values are given to two significant figures. data are available in TAT files. Unless otherwise noted, the data originally submitted by the laboratory were not reviewed, are as received from the laboratory and are uncorrected for percent moisture.

COVA DEBRU SITE
SEMI-VOLATILE ORGANIC RESULTS (Continued)
October 1991

	CDS-018		CDS-020		CDS-021	
	CLP	Orig.	CLP	Orig.	CLP	Orig.
	ug/kg		ug/kg		ug/kg	
Phenol	810 U	<670	R	R	R	R
Bis(2-chloroethyl)ether	810 U	<670	R	R	R	R
2-Chlorophenol	810 U	<670	R	R	R	R
1,3-Dichlorobenzene	810 U	<670	R	R	R	R
1,4-Dichlorobenzene	810 U	<670	R	R	R	R
Benzyl alcohol	N/A	<1300	N/A	R	N/A	R
1,2-Dichlorobenzene	810 U	<670	R	R	R	R
2-Methylphenol	810 U	<670	R	R	R	R
Bis(2-Chloroisopropyl)ether	810 U	<670	R	R	R	R
4-Methylphenol	810 U	<670	R	R	R	R
N-Nitroso-di-n-propylamine	810 U	<670	R	R	R	R
Hexachloroethane	810 U	<670	R	R	R	R
Nitrobenzene	810 U	<670	R	R	R	R
Isophorone	810 U	<670	R	R	R	R
2-Nitrophenol	810 U	<670	R	R	R	R
2,4-Dimethylphenol	810 U	<670	R	R	R	R
Benzoic acid	N/A	<1400	N/A	R	N/A	R
Bis(2-chloroethoxy)methane	810 U	<670	R	R	R	R
2,4-Dichlorophenol	810 U	<670	R	R	R	R
1,2,4-Trichlorobenzene	810 U	<670	R	R	R	R
Naphthalene	810 U	<670	R	R	R	R
4-Chloroaniline	810 U	<1300	R	R	R	R
Hexachlorobutadiene	810 U	<670	R	R	R	R
4-Chloro-3-methylphenol	810 U	<670	R	R	R	R
2-Methylnaphthalene	810 U	<670	R	R	R	R
Hexachlorocyclopentadiene	810 U	<670	R	R	R	R

COZA DEBON SITE
SEMI-VOLATILE ORGANIC RESULTS (Continued)
October 1991

	COS-018		COS-020		COS-021	
	CLP	Orig.	CLP	Orig.	CLP	Orig.
	ug/kg		ug/kg		ug/kg	
2,4,6-Trichlorophenol	310 U	<670	R	R	R	R
2,4,5-Trichlorophenol	2000 U	<670	R	R	R	R
2-Chloronaphthalene	810 U	<3400	R	R	R	R
2-Nitroaniline	2000 U	<3400	R	R	R	R
Dimethylphthalate	810 U	<670	R	R	R	R
Acenaphthylene	810 U	<670	R	R	P	R
3-Nitroaniline	2000 U	<3400	R	R	R	R
Acenaphthene	810 U	<670	R	R	R	R
2,4-Dinitrophenol	2000 U	<3400	R	R	R	R
4-Nitrophenol	2000 U	<3400	R	R	R	R
Dibenzofuran	810 U	<670	R	R	R	R
2,4-Dinitrotoluene	810 U	<670	R	R	R	R
2,6-Dinitrotoluene	810 U	<670	R	R	R	R
Diethylphthalate	810 U	<670	R	R	R	R
4-Chlorophenyl-phenylether	810 U	<670	R	R	R	R
Fluorene	810 U	<670	R	R	R	R
4-Nitroaniline	2000 U	<3400	R	R	R	R
4,6-Dinitro-2-methylphenol	2000 U	<3400	R	R	R	R
N-Nitrosodiphenylamine	810 U	<670	R	R	R	R
4-Bromophenyl-phenylether	810 U	<670	R	R	R	R
Hexachlorobenzene	810 U	<670	R	R	R	R
Pentachlorophenol	2000 U	<3400	R	R	R	R
Phenanthrene	810 U	<670	R	R	R	R
Anthracene	810 U	<670	R	R	R	R
Carbazole	810 U	N/A	R	N/A	R	N/A
Di-n-butylphthalate	810 U	<670	R	R	R	R

COTA DRUM SITE
SEMI-VOLATILE ORGANIC RESULTS (Continued)
October 1991

	CDS-018		CDS-020		CDS-021	
	CLP	Orig.	CLP	Orig.	CLP	Orig.
	ug/kg		ug/kg		ug/kg	
Fluoranthene	810 U	<670	R	R	R	R
Pyrene	810 U	<670	R	R	R	R
Butylbenzylphthalate	810 U	<670	R	R	R	R
3,3'-Dichlorobenzidine	810 U	<1300	R	R	R	R
Benzo(a)anthracene	810 U	<670	R	R	R	R
Bis(2-ethylhexyl)phthalate	810 U	<670	R	R	R	R
Chrysene	810 U	<670	R	R	R	R
Di-n-octylphthalate	810 U	<670	R	R	R	R
Benzo(b)fluoranthene	810 U	<670	R	R	R	R
Benzo(k)fluoranthene	810 U	<670	R	R	R	R
Benzo(a)pyrene	810 U	<670	R	R	R	R
Indeno(1,2,3-cd)pyrene	810 U	<670	R	R	R	R
Dibenzo(a,h)anthracene	810 U	<670	R	R	R	R
Benzo(g,h,i)perylene	810 U	<670	R	R	R	R

The following codes were used in reviewing the data:

- J = The associated value is an estimated quantity because the reported concentrations did not meet quality control criteria.
- N/A = Data are not available for this compound.
- R = The sample results are rejected (analyte may or may not be present) due to gross deficiencies in quality control criteria. Any reported value is unusable. Resampling and/or reanalysis is necessary for verification.
- UJ = The material was analyzed for but was not detected. The reported detection limit is estimated because quality control criteria were not met.
- U = The material was analyzed for but was not detected. The associated value is either the sample quantity limit or the sample detection limit.

Note: CLP non-detect values are contract required detection limits (CRDL). Positive CLP values are given to two significant figures. Original CLP data are available in TAT files. The data originally submitted by the laboratory were not reviewed, are reported above as received from the laboratory and are uncorrected for percent moisture.



ecology and environment, inc.

CLOVERLEAF BUILDING 3, 6405 METCALF, OVERLAND PARK, KANSAS 66202, TEL. 913/432-9961

International Specialists in the Environment

MEMORANDUM

TO: Paul Doherty, EPA/DPO

FROM: Joseph M. Parish, E & E/TATM *JMP*

THRU: Joe Chandler, E & E/TATM *JCC*

DATE: September 26, 1991

SUBJECT: Site Assessment: Cota Drum Site, Des Moines, Iowa
TDD#: T07-9105-039B
PAN#: EIA0160SBA
OSC: Mark Roberts, OSC

INTRODUCTION

The Ecology and Environment Technical Assistance Team (E & E/TAT) was tasked by the Environmental Protection Agency Emergency Planning and Response Branch (EPA/EP & R) to assist in the site assessment of the Cota Drum site, Polk County, Iowa. Specific elements of the task included managing and overseeing an exploratory trenching operation and collecting soil, sludge, and groundwater samples for hazard categorization and laboratory analysis. The TDD was amended to include a land survey prior to the exploratory trenching operation. The purpose of the assessment was to provide enough evidence to support a state lead enforcement case against the potentially responsible parties. The exploratory trenching operation entailed recovery, sampling, and containerization (where appropriate) of waste materials and soils from several areas identified by the geophysical investigation performed by TAT. Groundwater samples were unobtainable by the methods utilized. Groundwater migration will be addressed at a later date, and may involve the installation of monitoring wells.

The exploratory trenching operation successfully uncovered containerized and uncontainerized waste materials and confirmed the disposal boundaries identified by the geophysical survey. The analytical results have not gone through the full review process. A full discussion of the analytical results will be conducted under a separate TDD when the results are available.

SITE LOCATION

The Cota Drum site is located at 5512 S.E. 14th St., Des Moines, Polk County, Iowa (Map 1). It is an abandoned coating manufacturing facility formerly known as Cota Industries, Inc.

REFERENCES

1. Trip Report: Cota Industries, Des Moines, IA, EPA/REGION 7, April 25, 1991, Wood Ramsey OSC.
2. Investigation Report: Cota Industries, Inc. Site, IDNR, March 19, 1990.
3. TAT Letter Report: Site Assessment: Geophysical Survey, Cota Drums, Des Moines, Iowa, E & E/TAT April 22, 1991, TDD# T07-9103-028, PAN# EIA-0160-SAA
4. OSHA regulations, 29 CFR Part 126, Subpart P (7-1-90 ed.)

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SITE DESCRIPTION

Cota Industries manufactured industrial paints and coatings, including bonding/acoustic coatings and pool and paint glaze. The plant was in operation from 1961 to circa 1985. The 10-acre property consists of two parking lots and a combined manufacturing building and warehouse, bordered south and west by a large field (Map 2). The site is located in a light industrial/residential area. It is bordered by Southeast 14th Street to the east. An elementary school is located beyond the field to the west, while to the south is a residential neighborhood. Two abandoned homes and a small hotel are adjacent to the north (Ref. 1). Presently, the site is secured with a fence and the building is boarded up. Drums of presumed hazardous materials, PPE, and decon water from the exploratory trenching operation are being temporarily stored in the building.

The topography around the site is gently rolling and the site drains to the west and north. The site is underlain by glacial deposits. The direction of ground water flow is not known at this time. The depth to the water table is also unknown. The Geoprobe used during the exploratory trenching was unable to penetrate below 15 feet, at which point ground water had not been encountered.

SITE HISTORY/ PREVIOUS INVESTIGATIONS

The site became an environmental concern following a complaint in November 1989 that "leaking chemical drums" had been stored outside the plant. Site inspections conducted by the Iowa Department of Natural Resources (IDNR) confirmed these allegations. Further inspections revealed a disposal area of partially buried drums and other containers extending about 200 feet west of the plant along with an area of discolored soil. The soil was sampled and analytical results revealed elevated levels of mercury (190 mg/Kg). (Ref. 2).

The site received further attention following media coverage of an incident of exposure to contaminants involving several children in March of 1991. After hearing the broadcast, a former employee came forward with additional information concerning the site. He stated that drums were routinely buried on site. Most were empty, but some ranged from full to half full and contained formaldehyde and muriatic acid. In addition, sacks of pigment containing lead and asbestos were buried. The employee also recalled coating wastes being flushed out from the building (Ref. 2).

The IDNR requested aid from the Region VII Environmental Protection Agency (EPA) following the reported incidents. The EPA, in turn, tasked the Ecology and Environment, Inc. Technical Assistance Team (E & E, TAT) to perform a geophysical investigation of the site to locate the buried drums. The geophysical investigation was performed March 21-23, 1991 under TDD# T07-9103-028. The results of the investigation revealed a half acre area to the west of the property containing a massive amount of buried metal, concentrated in four smaller areas. In addition, the former employee met with EPA and TAT on site and pointed out the location of the open trench in which sacks of asbestos, lead pigment and

fiber board drums were buried. Responses from the geophysical survey suggested highly conductive materials, but little metal was identified in this area. This area extending north was identified as area 5 on the survey (Ref. 3).

The IDNR again requested the assistance from the EPA in May 1991 after reading the EPA and TAT investigation reports. IDNR requested implementation of the recommendations from these reports, which included exploratory trenching and perimeter sampling.

ON SITE ACTIVITIES

Land Survey

On June 19, 1991 TAT member Joe Parish arrived with the Environmental Protection Agency On-Scene Coordinators (OSC) Mark Roberts and Dan Harris on site to perform a land survey. The purpose of the land survey was to provide an accurate map that would identify the burial boundaries, exploratory trenches, and groundwater sampling points. The survey was completed in one day. The EPA Global Positioning System (GPS) was utilized to determine location coordinates and elevation. Sampling locations and the six exploratory trenches were staked to prepare for the upcoming site assessment. Three additional groundwater sampling locations were identified and marked. During this time the assessment was tentatively scheduled for the week of July 8.

Exploratory Trenching and Sampling

Summary

The exploratory trenching and sampling operation was officially scheduled for July 15-18 after all arrangements were made concerning site access, storage of hazardous materials, and availability of equipment. Evans Engineering and Construction from Council Bluffs, Iowa was selected as the subcontractor to perform the exploratory trenching operation under special projects TDD# T07-9105-038. TAT member Parish made arrangements with Evans to meet on site on July 15, 1991.

The trenching operation was performed as scheduled July 15-17, 1991. Four trenches were excavated at areas identified from the geophysical survey (Map 4). One trench (TR3, Area 1) was completely excavated and three others (TR1, Area 5; TR2, Area 2; TR4, Area 1) were partially excavated (Map 4). Approximately 10 intact 55 gallon drums were unearthed, of which four had some content. An uncountable number of metal and fiber drum fragments and parts were encountered as well as other scrap metal. Several smaller containers, including 5 gallon plastic drums and steel pails, were unearthed. Some of these had contents that were sampled. In addition, remnants of plastic and paper sacks were uncovered, many of which contained hardened sludge, presumably paint pigment and filler. Several samples were collected of these substances, which appeared to contain asbestos fibers.

A total of 23 samples were taken during the trenching operation, of which 22 samples were submitted for laboratory analysis. Sample #

CDS-014 (Drum # TR-2-01) was not submitted for analysis. Three were composites from the trench bottoms, three were composites of the trench spoil, four were 55 gallon drum samples, 10 were various solid to semi-liquid sludges from the trenches, one was a soil taken from the former drum storage area, and one was a soil composite taken from the spill area. Twenty-one samples and a duplicate were submitted to the lab for analysis. These are summarized in Table 1. Several of the samples were hazard categorized (HAZCAT). The results of the HAZCAT tentatively identified lead and asbestos in a large portion of the samples. The field screening results are presented in Table 2.

The exploratory trenching confirmed the boundaries identified by the geophysical survey. Trenches TR2 and TR4 were excavated beyond the burial boundary. The edges were clearly observed to end abruptly within two and six feet respectively from the boundaries defined by the geophysical survey.

The Geoprobe operation to collect groundwater was attempted on July 18, 1991. All attempts to penetrate to groundwater were unsuccessful. A hard, clay layer was encountered between 12 and 15 feet below the surface and the probe was unable to penetrate below this level. TATM Parish discussed with OSC Roberts and Ron Kozel, IDNR, the option of taking discrete soil samples at depth. TAT suggested that the deep soil samples along the burial perimeter would not be representative of contamination below the trenches. Composite samples had already been collected from below the burial area during the exploratory trenching operation, and Kozel indicated that the groundwater issue would ultimately have to be addressed. OSC Roberts agreed and suggested that the groundwater issue be addressed in another phase of the assessment, possibly by the installation of monitoring wells, pending results of the current sampling.

Chronology of Events

July 15, 1991

TAT members Joe Parish and Dave Kinroth met with the OSC, Mark Roberts, and two personnel from Evans Engineering on site. Later, Ron Kozel and Randy Lane from the Iowa Department of Natural Resources (IDNR) arrived. Parish briefed Evans Engineering on the basic project plans and Kinroth held a brief safety meeting before the project commenced. Parish and Kinroth prepared a decon/staging area approximately 100 feet south of the burial area.

After the trenching equipment arrived on site, Parish directed the Evans crew to start the excavation at E-W leg of trench TR1 (Map 4). Trench TR1 was excavated in the burial area identified as Area 5, which had been identified as containing sacks and fiberboard drums. Doug Evans operated the backhoe. Within ten minutes, the backhoe encountered what appeared to be the remnants of plastic sacks and a white, friable substance presumably containing asbestos fibers. Parish sampled the substance, labeling the sample CDS-001. A hNu photoionization detector was used to monitor air quality, but no response above background was encountered. The trench was expanded westward to a depth of about five

feet and length of about 15 feet, and then expanded to a width of about 10 feet. Most of the waste was encountered at a two to three feet depth, and none was found to extend below four feet. The amount of waste encountered diminished rapidly towards the west boundary defined in the geophysical survey.

Parish directed Evans to stage various solids north of the trench for sampling. Parish then directed Evans to excavate the N-S leg of the trench, beginning at the north end in the area defined as area 5 in the geophysical survey (Ref. 3). A larger amount of sack remnants and waste solids were encountered here than in the previous excavation. No steel drums were encountered and very little metal, as anticipated. Evans staged various waste solids for sampling. After the N-S leg of TR1 was extended approximately 15 feet long and four feet wide, Parish directed Evans to stop the excavation. At this time, Parish collected a composite sample from the trench bottom (CDS-003, a silty clay) another sample of the waste solids (CDS-004) and a composite of the trench spoil (CDS-005). CDS-003 was collected by scraping the sides of the trench at three locations with a stainless steel spoon to remove any contaminated soil or sludge that might have fallen to the bottom of the trench, then collecting the sample with a second clean spoon from the freshly exposed areas.

The excavation unintentionally went to seven feet deep at the south end of the trench, at which depth water began to accumulate. Since the trench extended below five feet deep, Parish directed Evans Engineering to immediately backfill the trench to comply with OSHA regulations (general OSHA regulations require shoring for trenches greater than 5 feet in depth) (Ref. 4). Observations of the side of the trench wall showed the waste to extend to an average depth of two or three feet, but not more than four feet. After Evans backfilled the trench, OSC Roberts directed Evans to cap the excavated area with clean dirt scraped from an area well away from the burial area. Parish and Roberts agreed that all trenches would be backfilled in this manner. After completing the excavation, Evans deconned the backhoe bucket with a pressure, steam cleaner as prescribed by TAT. TATM Kinroth then prepared to HAZCAT selected samples.

Parish then directed Evans to begin excavation of trench TR2, informing them to stay within the five foot depth limit so that shoring would not be required. Trench TR2 extended over burial areas 2. The excavation began at the north end and within five minutes, a 55 gallon drum was unearthed. The drum was partially crushed but contained a small amount of liquid. This drum was designated TR2-01 and was staged at the side of the trench. The air quality around the drum was monitored with the HNU. No response above background was encountered. Further excavating revealed several severely deteriorated drum fragments and remnants. One drum remnant contained a black, viscous substance that spilled on the edge of the trench when uncovered. The air quality around the drum was 1 ppm above background measured by the HNU. Parish sampled the substance mixed with dirt from the trench (sample CDS-006). A short time later, a small heavily rusted container remnant was unearthed and staged for sampling. The container was covered with a viscous sludge that gave an initial response of greater than 20 ppm on

the HNU, but later settled to 6 ppm. At this time the trench had reached a length of 15 feet and depth of four feet. At 20 feet from the north end and 3 feet deep, another 55 gallon drum was encountered, designated TR2-02. This drum was excavated and staged for sampling. Parish then sampled the viscous sludge from the small, steel container (sample CDS-007). A short time later, a third 55 gallon drum was encountered (TR2-03). The heavily deteriorated drum was pierced when the crew attempted to uncover it, revealing a clear liquid. Parish sampled the liquid as it gushed out (sample CDS-008). The crew removed the drum and overpacked it.

After these events, the crew was finished for the day. Parish directed Evans to place banner guard around the trench. Kinroth informed Parish of the initial HAZCAT results. All three samples tested positive for lead. Roberts and Parish discussed the next days work. Sampling would continue in trench TR2, but before excavation continued, all utilities would have to be identified. Some utilities had been previously marked, but Mat Woody from the HAZMAT team could not be contacted to verify which ones. Evans left the site after discussion of the next days work. Shortly after, the TAT, OSC Roberts, and the IDNR representatives left. Parish and Kinroth packed the eight samples in a cooler to await shipment to the lab pending final lab contract approval.

July 16, 1991

TAT members Parish and Kinroth met with the OSC Roberts and Evans Engineering on site. Parish discussed the days objectives with Roberts. Roberts said he would work on contacting all utility companies of concern so the excavation could be moved from TR2. Evans would work on clearing out TR2 of drums and buckets for staging and sampling and overpacking, and final filling and capping.

Parish directed Evans to complete the planned work at trench TR2. Soon after the task began, a black oozing substance contained in a five gallon plastic bucket was uncovered. Parish sampled this as number CDS-009. A reading of 4 ppm on the HNU was encountered near the substance. The trench was dug to a depth of about five feet. Parish directed Evans to dig three small holes at the bottom of the trench about one foot depth. This was done to collect a composite sample at a sixth foot depth. Parish then collected the sample, taking care to scrape any residual contamination from the holes to insure an insitu, representative sample. A fourth drum (labeled TR2-04) was encountered and Parish directed Evans to remove and stage it for sampling. The drum appeared to contain a paint sludge. After Evans overpacked the drum, Parish took a composite sample of the spoil pile (CDS-011). When the sampling was completed, Parish directed Evans to backfill the trench. Trench TR2 measured 30 feet long, four feet wide, and about five feet deep. Four 55 gallon drums, a small steel drum, a five gallon plastic drum, and a steel pail were removed from it. Two of the drums were overpacked, two of the drums contents were placed in 55 gallon drums, since they could not fit in an overpack, and the other containers were place in a 55 gallon open top drum.

A short time later, Iowa power came on site to check utilities. After a brief inspection, they informed TAT and the OSC that they had no lines in the vicinity of the excavated area. Evans was then directed to open the staged drums for sampling. After this was done, Kinroth sampled drums TR2-04, TR2-02, and TR2-01 in level B protective gear. These were labeled sample numbers CDS-012, 013, and 014 respectively. Drum TR2-04 gave a reading of 5 ppm with the HNU. Sample # CDS-014 was not submitted for analysis.

By early afternoon, Roberts had heard from all the utilities except for the cable TV company (who later verified that they had no cables in the area), so it was decided to continue with the trenching. Parish directed Evans to excavate the south portion of TR2 to observe the waste boundaries. The trench was opened to a length of 12 feet and a depth of about four feet. The edge was observed and marked with a lath (Map 3). Evans deconned the shovel bucket and then prepared to excavate the east-west leg of trench TR3 (Maps 2-4). Evans started excavating on the east end and worked westward. Four to six intact but crushed drums, a long pipe, and other scrap metal were encountered. A white, powdery sludge was unearthed and sampled (CDS-015) by Evans as directed and supervised by Parish. After the trench was completely opened to a depth of about five feet, a composite sample (CDS-016 and duplicate CDS-017) was taken by Parish of the spoil pile. The trench was left opened and banner guard placed around it, as the team prepared to leave the site for the day.

July 17, 1991

TAT members Parish and Kinroth met with the OSC Mark Roberts and Evans Engineering on site. Parish briefed Evans on the days work objectives. Trench TR3 would be completed, sampled and backfilled. A short segment of TR4 would be excavated to verify the edge of burial area 1 as estimated by the geophysical survey.

Parish directed Evans to clear the bottom of the east-west leg of the trench for sampling. Five small holes one foot wide and one foot deep were dug for sampling points to avoid making the trench deeper than five feet. After these were completed, Parish collected a composite sample from the trench bottom (CDS-018) in the same manner as sample CDS-010 from TR2. After sampling Parish directed Evans to backfill the trench.

After deconning the backhoe bucket, Parish directed Evans to begin excavating the north-south leg of trench TR3. The trench was opened the full length as shown in Map 4. Trench TR 3 was excavated in burial area 1. Several pieces of scrap metal, one empty, crushed drum, and several drum remnants were uncovered. Both a white powdery substance and a reddish, friable solid were uncovered. The latter was sampled (CDS-019) for total metals analysis. The trench extended all the way to the spill area revealing the spill to be several inches thick. Nothing else unusual was found. At this time, the trench was dug unintentionally to a depth exceeding five feet, so Roberts and Parish required the laborer from Evans to get out of the trench. Additional work inside the trench was halted. Parish directed Evans to cover the trench and decon the

bucket. After this task, Parish directed Evans to excavate a small segment of TR4 to observe the edge of burial area 1. Parish redefined the trench location to run north-south over the anomaly extending over the edge to better accomplish this. The trench was dug to a depth of less than four feet and to a length of about ten feet (Map 4). A white substance was uncovered in a small container that gave an HNU response of 50 ppm near the source and greater than 5 ppm in the trench. Evans uncovered the container for sampling, but were directed to stay out of the trench because of the high HNU readings. Also uncovered was a blueish-gray crystalline substance and a gray sludge. The white substance and the crystalline substance were sampled and labeled CDS-020 and CDS-021 respectively. After completion of sampling, Parish directed Evans to backfill TR4, and cap TR3 and TR4 with clean dirt. Evans deconned the backhoe after backfilling, and proceeded to cap the excavated areas. The exploratory trenching was completed at this time.

In the early afternoon, Kozel and Lane from the IDNR, and the IDNR's attorney, Mark Landa came on site. Kozel requested that soil samples be taken of the spill area and former drum storage area (Map 2). Kinroth dressed out and took composite samples of these areas (samples CDS-022 and CDS-023 respectively). These were the final samples taken. After all sampling was completed, Parish directed Evans Engineering to stage the drums in the Cota facilities warehouse. A new security door had been installed on the warehouse by IDNR. After this task was completed, Evans broke down their equipment and prepared to leave site. The backhoe was left on site to await demobilization the following day. Parish made final arrangements for sample shipping, and all left the site. The samples were iced to 4° C and placed in coolers. Back at the hotel, final packing and shipping paperwork was completed and the samples were shipped to the lab for analysis. Sample information is summarized in table 1.

Later, TAT member Randy Schademann arrived with the Geoprobe and met with Parish, Kinroth, and OSC Roberts. The next days sampling strategy utilizing the Geoprobe was discussed and arrangements were made to meet on site the following morning.

July 18, 1991

TAT members Parish, Kinroth and Schademann and OSC Roberts met on site. Later, Lane and Kozel came on site to observe. It was planned to take groundwater samples at a maximum of nine locations. Parish and Roberts showed Schademann the sampling points, and Schademann prepared to take the first sample at location GW1 for background. At this location, the geoprobe could not penetrate to the water table, so it was decided to move the background sample to a lower elevation, shown on Map 2 as GW10. At this location, water was encountered, but was determined by Schademann to be a confined pocket and not true groundwater. The TAT attempted to collect groundwater at several other locations close to the burial area, but the probe was unable to penetrate below a level of 15 feet, and came up dry each time. The option of collecting discrete soil samples was discussed, but it was agreed that these samples would not be indicative and the groundwater issue would ultimately need to be addressed. Tentative plans were

discussed to utilize the EPA drill rig to install temporary monitoring wells to collect groundwater samples. At this time, it was decided that sufficient sampling had been done to build an enforcement case and all left site for lunch break. Parish and Kinroth agreed to go back to the site after lunch to await the Evans engineering truck drivers who would be arriving to demobilize the backhoe.

Parish and Kinroth arrived back on site following the lunch break. The sampling paperwork was finalized, and later that afternoon, Evans arrived on site and demobilized their equipment. TAT secured the gate and left the site. Parish contacted the TAT analytical services to request that select samples be analyzed for formaldehyde, as directed by the IDNR. Later, the analytical services informed Parish that all samples had arrived safely at the lab, but there was some discrepancy between the number of containers listed on the chain-of-custody and the actual number received. Parish contacted the lab. The lab informed Parish that there was enough samples to complete the analyses requested and they would check on the holding time for formaldehyde. Parish contacted Ron Kozel about possible problems with the formaldehyde analysis. Kozel felt that the analysis was important and directed Parish to go ahead and proceed with it.

July 19, 22-26

Parish coordinated with the lab, the analytical services, Ron Kozel and OSC Roberts to make decisions regarding the formaldehyde analysis and other problems with the samples. The lab informed Parish that the samples were out of holding time for the formaldehyde analysis, but felt confident that they could run them with usable results. The analytical services agreed with this conclusion, and both Roberts and Kozel agreed to have the samples analyzed for formaldehyde, since this was one of the materials mentioned by the former employees of Cota. Other minor problems were encountered, but resolved.

DISCUSSION

Assessment Objectives

The goal of the project was to gather evidence to support a state lead enforcement case against the potentially responsible parties. Three objectives were set to accomplish this goal (Ref. 1 and 2):

- Objective 1. To determine whether buried wastes are present in the anomalous areas identified during the geophysical survey.
- Objective 2. To determine whether the burial wastes are hazardous substances.
- Objective 3. To determine whether hazardous substances have been released into the environment.

Objective 1 was met by performing an exploratory trenching and sampling operation based on the geophysical survey. The exploratory trenching operation involved partially excavating four trenches (Map

4) and uncovering solid wastes, soils and drums for sampling and proceeded according to plan. Trenches numbered TR1 through TR4 were excavated. Drums were selected, removed and staged for sampling at the discretion of the EPA On-Scene Coordinator (OSC) and TAT. The exploratory trenching took three days to complete, as anticipated. After excavation, the trenches were filled and capped with clean dirt as directed by the OSC and TAT. Samples were hazard categorized (HAZCAT) on site and selected for laboratory analysis. Objective 2 will be dependent on the results of the samples collected and will be addressed in a sample summary once the results are available.

Objective 3 was met through collection of soil composites below the observed burial area. A future issue of concern will be to determine the extent of migration, especially through the groundwater route. The groundwater issue will be addressed at a later date pending evaluation of the analytical results by the EPA and IDNR. There has been some discussion between the EPA and IDNR concerning the installation of temporary monitoring wells.

Geophysical Results

The exploratory trenching confirmed the results of the geophysical survey. The boundaries of the burial defined by direct observation of the exploratory trenches was within a few feet of the boundary defined by the geophysical survey (Map 4). Trenching in area five (as defined in the geophysical investigation) uncovered sacks of hardened pigment and very little metal, as concluded from the geophysical survey (Ref. 3). Steel 55 gallon drums and smaller containers and drum remnants were uncovered from trenches TR2 and TR3 along with heavy scrap metal. Smaller containers were found in trench TR4 with pure product.

Analytical Results

The analytical results are currently being reviewed by the E & E analytical services as requested by the project manager and OSC. A sample summary of the analytical results will be discussed in a follow-up report.

ATTACHMENTS

- Table 1
- Table 2
- References
- Site Maps 1-4
- Photo log

TABLE 1. SAMPLING SUMMARY - COTA DRUMS, DES MOINES, IOWA

SAMPLE NO.	LOCATION	DESCRIPTION	ANALYSES REQUESTED
CDS-001	TR-1	GRAB, PRODUCT SOLIDS	ASBESTOS
CDS-002	TR-1	COMPOSITE, PRODUCT SOLIDS	TOTAL METALS
CDS-003	TR-1	COMPOSITE, TRENCH BOTTOM AT 6 FEET	HNA, VOAS, TOTAL METALS, FORMALDEHYDE
CDS-004	TR-1	COMPOSITE, PRODUCT SOLIDS	ASBESTOS, TOTAL METALS
CDS-005	TR-1	COMPOSITE OF SPOIL PILE	HNA, VOAS, TOTAL METALS, FORMALDEHYDE
CDS-006	TR-2	COMPOSITE OF DRUM SPILL	HNA, VOAS, TOTAL METALS
CDS-007	TR-2	GRAB, SLUDGE FROM 2 GALLON BUCKET	HNA, VOAS, TOTAL METALS
CDS-008	TR-2	DRUM # TR-2-03	HNA, VOAS, TOTAL METALS
CDS-009	TR-2	GRAB, SLUDGE FROM 5 GALLON DRUM	HNA, VOAS, TOTAL METALS
CDS-010	TR-2	COMPOSITE, TRENCH BOTTOM AT 6 FEET	HNA, VOAS, TOTAL METALS, FORMALDEHYDE
CDS-011	TR-2	COMPOSITE OF SPOIL PILE	HNA, VOAS, TOTAL METALS, FORMALDEHYDE
CDS-012	TR-2	DRUM # TR-2-04	HNA, VOAS, TOTAL METALS
CDS-013	TR-2	DRUM # TR-2-02	HNA, VOAS, TOTAL METALS
CDS-014	TR-2	DRUM # TR-2-01	NOT SUBMITTED FOR ANALYSIS
CDS-015	TR-3(E-W)	GRAB, WHITE POWDER ORIGINALLY IN BAG	ASBESTOS, TOTAL METALS
CDS-016	TR-3(E-W)	COMPOSITE SPOIL PILE	HNA, VOAS, TOTAL METALS, FORMALDEHYDE
CDS-017	TR-3(E-W)	DUPLICATE OF CDS-016	HNA, VOAS, TOTAL METALS
CDS-018	TR-3(E-W)	COMPOSITE, TRENCH BOTTOM AT 6 FEET	HNA, VOAS, TOTAL METALS, FORMALDEHYDE
CDS-019	TR-3(N-S)	GRAB, RED SOLID PRODUCT	TOTAL METALS
CDS-020	TR-4	GRAB, WHITE SEMI-LIQUID, 50 PPM HNU	HNA, VOAS, TOTAL METALS
CDS-021	TR-4	GRAB, GREY-BLUE CRYSTALLINE SUBSTANCE	HNA, VOAS, TOTAL METALS
CDS-022	SPILL AREA	COMPOSITE, PAINT SLUDGE AND SOIL	ASBESTOS, TOTAL METALS
CDS-023	FORMER STAGING AREA	SOIL COMPOSITE	ASBESTOS, TOTAL METALS

TABLE 2. HAZCAT SUMMARY - COTA DRUMS, DES MOINES, IOWA

SAMPLE NO.	DATE/LOCATION	HAZCAT SUMMARY						
		HNU	pH	oxidizer	lead	mercury	asbestos I	asbestos II
CDS-001	7/15/91/TR-1	NT	NT	neg	pos	neg	pos	neg
CDS-002	7/15/91/TR-1	NT	NT	neg	pos	neg	pos	neg
CDS-004	7/15/91/TR-1	NT	NT	neg	pos	neg	pos	neg
CDS-006	7/15/91/TR-2	2	6	neg	inc	neg	NT	NT
CDS-008	7/15/91/TR-2	15	7	neg	pos	neg	NT	NT
CDS-009	7/16/91/TR-2	<1	7	neg	pos	neg	NT	NT
CDS-012	7/16/91/TR-2	25	6	neg	neg	neg	NT	NT
CDS-013	7/16/91/TR-2	NT	9	neg	inc	neg	NT	NT
CDS-014	7/16/91/TR-2	NT	7	neg	inc	inc	NT	NT
CDS-015	7/16/91/TR-3(E-W)	NT	7	neg	pos	neg	NT	NT
CDS-019	7/17/91/TR-3(N-S)	NT	7	pos	pos	neg	inc	neg

EXPLANATION:

All samples were non-reactive in water

All samples were non-combustible

NT = not tested

inc = inconclusive, in most cases due to color of sample

HNU readings in ppm

IOWA DEPARTMENT OF NATURAL RESOURCES

***** TRANSMITTAL SLIP *****

Date Nov. 24, 1992

TO: Mike Valde, Attorney General, Hodver Bldg.
FROM: Ron Kozel

- | | |
|--|--|
| ☐ REPLY FOR MY SIGNATURE | ☐ NOTE AND FORWARD |
| ☐ REPLY DIRECT | ☐ FILE |
| ☐ REVIEW, COMMENT AND RETURN | ☐ FOR YOUR SIGNATURE |
| ☐ INVESTIGATE AND REPORT | ☐ FOR YOUR APPROVAL |
| ☐ SEE ME | ☐ PER YOUR REQUEST |
| ☐ FOR YOUR INFORMATION | ☒ PER OUR CONVERSATION |
| ☐ TAKE ACTION BY _____ (Date) | |

☐ COMMENTS:

This is the Follow-up report on Cota that was referenced in the earlier report of September 26. The portion dated October 30 is a quality control review of analytical data. The basic information is provided in the preceding section. You can decide which portions to give to responsible parties. EPA and TAT personnel are available for consultation.



Date: July 8, 1992

To: Joe Obr, Mike Murphy, Al Stokes

From: Ron Kozel

Re: Liens against properties

Yesterday I called Mike Valde of DOJ to request that he arrange for a lien against the Cota property as another mechanism for recovering our costs. Mike investigated the situation and called me back. He discovered that the law requires that the lien be placed on the property no more than 120 days after expenses have been incurred. Fortunately, in this case we still have the possibility of recovering our costs from the responsible party. However, if we spend more money on this site or other sites, we need to keep this time period in mind, especially if we do not have a viable responsible party.



TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES

LARRY J. WILSON, DIRECTOR

June 23, 1992

Michael Valde
Assistant Attorney General
Hoover Building
LOCAL

RE: Cota Industries

Dear Mr. Valde:

Enclosed is an additional report of investigation on this matter, which we have received. The investigation documents buried wastes on site, including deteriorated drums containing sludges including hazardous substances. We feel the following actions are needed:

1. All visible contamination in the spill area needs to be removed and properly disposed.
2. The extent of contamination in the spill and staging areas needs to be defined and remediated.
3. All containers and wastes buried in the trench need to be removed and properly disposed, with followup sampling to determine contamination in that area.
4. Groundwater sampling must be conducted.
5. Contaminants and containers now stored in the building must be properly disposed.

If you have any technical questions, please contact Ron Kozel.

Sincerely,

Michael P. Murphy
Chief
Legal Services Bureau

Confidential Enforcement Memo

Date: February 21, 1992

To: Joe, Mike, Al

From: Ron

Re: Cota Industries

I have reviewed the two attached reports from EPA and the Technical Assistance Team (TAT). The reports concluded that hazardous substances were disposed at the site and that some wastes were released to the environment. Laboratory analysis provided the following information:

1. Concentrations of mercury above background levels were detected in the area of spilled materials and the area where drums were formerly stored.
2. Concentrations of cadmium above background were detected in sludge from trench TR3 and in a composite of soil from the same trench.
3. A concentration of zinc above background was detected in the area of the spill.
4. Laboratory analysis did not support historical evidence and field observations and screening that asbestos was present. EPA suggested that further sampling and analysis might be appropriate.
5. High levels of several volatile and semi-volatile organic compounds were detected in samples from sludges and drums.
6. The detection of trace amounts of organics in the soil samples at the bottom of trenches indicates the potential for migration of the contaminants.
7. Concentrations of formaldehyde were detected in samples taken from spoil piles.

Options

1. We can continue to require the responsible parties to conduct an overall assessment of the site and clean up contaminants as originally stated in our order.
2. We can ask EPA to attempt to collect groundwater samples by sampling through a hollow-core auger or installing monitoring wells.

3. We can modify the order and adjust the requirements based on the information we have gained from our investigations since the order was issued.

Recommendations

Our own sampling and subsequent laboratory analyses indicate that contaminants have not moved off site via the surface of the soil. EPA's investigation has revealed that hazardous substances are present in the area of the spill, the area in the grove of trees where the containers were stored, and in the trenches where containers were buried. The visual contamination in the area of the spill must be removed, and the boundaries of contamination in both the spill and staging areas need to be more clearly defined through grid sampling.

Containers discovered in the trenches showed an advanced state of deterioration, and many had already breached. Since contaminants were detected in sludges and surrounding soils, hazardous substances have clearly been released to the environment and have the potential for migration. However, given the levels of contaminants detected and the amount of time the containers have been in the ground, the contamination is likely very localized. If that is the case, removal of contaminants in the trenches would probably mitigate the problem without the need for additional assessment in the area of the trenches.

The unknown factor is the groundwater. We were unable to reach groundwater at a depth of 15 feet following about two months of no rain in the area. After heavy and frequent cycles of precipitation, the water level could conceivably rise to the area of the trenches, and potentially cause contamination in deeper layers of soil and the groundwater. EPA has indicated that assistance for sampling groundwater is available to us upon request, however, unless groundwater samples are absolutely necessary to enforce our case, the responsible parties should conduct this activity.

At the present time, we are awaiting the result of an appeal to the Supreme Court by Dan Cota, one of the responsible parties. Mr. Lee Gaudineer, Mr. Cota's attorney, had informed Mark Landa of potential coverage by insurance companies that supposedly covered Cota Industries from 1974 to 1986. Mark had correspondence with at least one of these companies. The Attorney General's Office has been waiting for the reports from EPA before forcing Cota and the two parties from Texas to comply with the order. In summary, I recommend that the responsible parties be required to take the following actions:

1. Remove all visible contamination in the spill area, and properly dispose of the contaminants.
2. Define the extent of contamination in the spill and staging areas through grid sampling, remove and properly dispose of the

contaminants, and conduct sampling following excavation to ensure that contaminants have been removed.

3. Remove all containers and wastes buried in the trench, dispose of them properly, and conduct sampling following removal to ensure that no more contaminants remain.

4. Conduct groundwater sampling in the area of the trenches to determine if groundwater is contaminated, and take appropriate remedial actions if contamination is discovered.

5. Properly dispose of all contaminants and containers that were previously removed by EPA and stored in the building.

The attached reports should be forwarded to Dave Sheridan for his use. Dave should also be advised that the following people have requested copies of the reports:

Lee Gaudineer - Mr. Cota's attorney
Allison Harmony - Crum & Forster Corporation
Candy Cota - Mr. Cota's daughter-in-law

Please let me know if you wish to discuss this matter. Thank you.

Drums stored in building at Ceta Industries

Two 55-gallon drums of decon water.

Two 55-gallon drums in 85-gallon overpacks with unknown liquids from trench #2.

One 55-gallon drum of sludge from trench #4.

One 55-gallon drum with four buckets of sludge from trench #2.

One 55-gallon drum of PPE.

Five empty 55-gallon drums.

Six empty 85-gallon drums.

November 22, 1991

MEMORANDUM

SUBJECT: Draft Report -- COTA Drum Site

FROM: Mark Roberts,
SINV/EP&R/ENSV/EPA VII

TO: Ron Kozel, IDNR

I have attached a draft copy of the COTA Drum Site Data Review prepared by the Ecology and Environment, Inc. Technical Assistance Team (E&E/TAT). The text has been edited to delete references to levels of contamination that may be construed to be representative of site-specific action levels protective of either human health or the environment. The report is currently undergoing a final edit by TAT and should be available in final form within two weeks. In the interim, I wanted to provide you with the opportunity to review the data package that has been so long in coming. I plan to be in the office for the next two weeks and would be happy to discuss the data and its interpretation.

ROUTING AND TRANSMITTAL SLIP

Date 01/02/92

TO: (Name, office symbol, room number, building, Agency/Post)

Initials

Date

1. RON KOZEL

2.

3.

4.

5.

Action	File	Note and Return
Approval	For Clearance	Per Conversation
As Requested	For Correction	Prepare Reply
Circulate	For Your Information	See Me
Comment	Investigate	Signature
Coordination	Justify	

REMARKS

RON -
HERE'S A COPY OF THE LATEST VERSION (REC'D 12/31/91) - AMENDED TO INCORPORATE DOWERY'S COMMENTS. IT'S PRETTY MUCH A STRAIGHTFORWARD NARRATIVE OF THE ANALYTICAL RESULTS WITH LITTLE EDITORIAL COMMENT (AND A FEW GRAMMATICAL ERRORS). LOOK IT OVER AND LET ME KNOW WHERE YOU'D LIKE TO GO FROM HERE.

AS FOR THE LEAD SITE - OUR ATTORNEYS HAVE ASKED THE CIVIL INVESTIGATORS TO GET INVOLVED IN TRACKING DOWN THE 'NEW' PROPERTY OWNER. HOPEFULLY, THIS WILL EXPEDITE THIS PAINFULLY SLOW PROCESS.

DO NOT use this form as a RECORD of approvals, concurrences, disposals, clearances, and similar actions

FROM: (Name, org. symbol, Agency/Post)

Room No.—Bldg.

MARK ROBERTS
SINV/EPKR/ENSU

Phone No.

913/551-5011

5041-102

*U.S.GPO: 1985-0-481-274/20015

OPTIONAL FORM 41 (Rev. 7-78)
Prescribed by GSA
FPMR (41 CFR) 101-11.206



ecology and environment, inc.

CLOVERLEAF BUILDING 3, 6405 METCALF, OVERLAND PARK, KANSAS 66202, TEL. 913/432-9961

International Specialists in the Environment

DRAFT

MEMORANDUM

TO: Paul Doherty, EPA/DPO
FROM: Joe Parish, E & E/TAT JWP
THRU: Joe Chandler, E & E/TATL JCC
DATE: November 7, 1991
SUBJECT: Data Summary: Cota Drum Site, Des Moines, IA
TDD#: T07-9110-016
PAN#: EIA0160QAA
OSC: Mark Roberts

INTRODUCTION

The Ecology and Environment, Inc., Technical Assistance Team (TAT) was tasked under TDD# T07-9105-039B to conduct a site assessment at the Cota Drum Site, Des Moines, Iowa. The site assessment included exploratory trenching and sampling of waste material and soils to determine the presence of hazardous wastes and/or materials. A trip report was submitted under TDD# T07-9105-039B (Ref. 1) detailing site activity. Validated sample results were not available at the time the trip report was submitted, therefore, the deliverable under this TDD represents the data summary and data validation package.

As discussed in the exploratory trenching TAT trip report, the project goal was to gather evidence to support a state-led enforcement case against the potentially responsible parties. Three objectives were cited to accomplish this goal:

- Objective 1. To determine whether buried wastes are present in the anomalous areas identified during the geophysical survey.
- Objective 2. To determine whether the buried wastes are hazardous substances and/or wastes.
- Objective 3. To determine whether hazardous substances and/or wastes have been released into the environment.

As discussed in the trip report, Objective 1 was met by the exploratory trenching and sampling operation based on the geophysical survey. Site observation alone confirmed the presence of buried wastes. Objectives 2 and 3, however, could not be fully met until the review process for the analytical results was completed. The data does indeed indicate that

some of the burial wastes are hazardous and that there has been a degree of contaminant migration into the environment. A complete discussion follows.

ANALYTICAL RESULTS

The analytical results are enclosed as Attachment 3 to this report. The results considered significant are given in Table 1 (Attachment 2). For convenience, the HAZCAT results and sampling summary from the trip report (Table 2 and 3) are also included. Table 1 includes the results considered of primary interest based on historical site data and site background characteristics. The concentrations of concern (COCs) are not action levels, but levels at which additional evaluation may be warranted. The COCs associated with soils have been established as minimum levels of concern during the course of previous or ongoing removal actions in Region VII (Ref. 2). Removal action levels (RAL) for contaminated drinking water sites and maximum contaminant levels (MCL), established by EPA for drinking water purposes only, are included for comparison purposes only (Ref. 5). However, ground water has not been identified as being used for drinking water in the area.

COMPOUND	COC (SOIL) mg/kg	MCL (GW) ug/L	RAL ug/L
Mercury	> 2	2	11
Lead	> 500	5(proposed)	--
Cadmium	> 25	5(proposed)	18
Barium		5000(proposed)	1,800
Zinc		--	7,000
Toluene		2000(proposed)	3,500
Xylenes(Mixed)		10000(proposed)	35,000
Formaldehyde		--	7,000
Methyl ethyl ketone		--	880

COC = Concentration of concern
GW = ground water

MCL = Maximum Contaminant Level
-- = Not determined
RAL = Removal Action Level

In addition to the above, asbestos contamination was of concern. Asbestos levels above one percent are considered significant by the EPA.

As shown in Table 1, all of these compounds, including formaldehyde, were detected at various levels in one or more of the samples. For comparison purposes, partial results from the IDNR investigation (Ref. 3) are included in Section D of Table 1. These are considered background, because the samples were taken by the IDNR on the southern border of the site, several hundred feet from the burial and spill areas (see attached Site Map).

Of primary concern was the mercury levels found in the soils. Two, possibly three, of these soils exceeded the 2 ug/kg COC level. The

other soils contained mercury at levels compatible with the assumed background levels of less than 1 mg/kg (Table 1-D). A level of 16 mg/kg was detected in CDS-022 and an estimated level of 9.0 mg/kg was detected in sample CDS-023. These samples came from the spill area and former drum storage area respectively. Sample CDS-016, from the spoil pile of trench TR3 (Site Map), showed an estimated level of 4.3 mg/kg. CDS-017, a duplicate of CDS-016, however, only showed an estimated level of 0.65 mg/kg, within the background range. Since both of these were estimated values, the conclusion can be drawn is that mercury was qualitatively detected and may or may not exceed the level of concern in the area represented by trench TR3. Conclusively, the spill area and former staging area (Site Map) are the primary areas of concern for mercury contamination.

Lead was detected in nearly every sample taken by both the HAZCAT operation (Table 2.) and the laboratory analysis. Most were at low levels, well within the background range of 17 to 28 mg/kg (Table 1-D). The HAZCAT results are likely due to false positives or interference at these concentrations. All levels in the soils and sludges were below the COC of 500 mg/kg. The highest value in the soils was 110 mg/kg found in sample CDS-023 taken from the former drum storage area, while the highest concentration in the sludges was 260 mg/kg from sample CDS-019 from trench TR3. Lead was detected at a value of 35 µg/L in one drum sample (liquid matrix, CDS-013), which exceeded the MCL for water by a factor of seven. This the drum was believed (after evaluation of the results) to contain water from run-off.

Cadmium was detected at a value above the COC (25 mg/kg) only in sample CDS-019, a sludge from trench TR3 at a value of 33 mg/kg. The highest level in any of the soils was detected in samples CDS-016 and its duplicate CDS-017, a composite of the spoil pile of trench TR3, at values of 6.3 and 11 mg/kg respectively, which are below the COC but higher than background (Table 1-D). The elevated level found in the sludge indicates that the potential exists for contaminant migration into the surrounding soils and ground water.

The highest level of zinc was found in sample CDS-022 taken from the spill area at 1500 mg/kg. Although this value is many times higher than the soils collected in the area, it is not at a COC.

Several other metals of secondary concern were detected in the samples, as can be seen in the full data tables (Attachment 3). The values for all the soil samples, however, were either at trace amounts or values within the naturally occurring range (Ref. 4). Not surprisingly, only a sludge sample, CDS-019, showed values of magnesium exceeding naturally occurring limits. The drum samples, CDS-008, CDS-012, and CDS-013, all of which were a liquid matrix, showed levels of certain metals, such as iron and manganese, exceeding most secondary standards. Only nickel could be definitively identified as being above the maximum contaminant level (MCL) for drinking water in the drum sample CDS-013. At 760 µg/L, the level was about seven times above the (proposed) MCL of 100 µg/L and above the RAL of 700 µg/L (Ref. 5).

DRAFT

Unexpectedly, only trace amounts of asbestos type II was detected in one sample, CDS-015, a sludge from trench TR3. The other samples analyzed for asbestos included CDS-001, CDS-004, CDS-022, and CDS-023. These samples tested non-detect for asbestos, even though there were fibers observed in the samples when they were taken, and the HAZCAT gave positive results for asbestos type I in CDS-001 and CDS-004 (Table 2). The positive HAZCAT results may be attributed to the high levels of iron in the samples, since the HAZCAT tests indirectly for asbestos by testing for the iron oxides commonly associated with asbestos type I. It is not known what the fibers are, though they were assumed to be asbestos. Since the historical evidence strongly suggests that asbestos was buried on site, further sampling and/or laboratory analysis should be considered.

There were several volatile and semi-volatile organic compounds detected. Some of the sludges had high levels of toluene, xylenes and other organics. In sample CDS-020, a paint sludge taken from trench TR4 (see Site Map), toluene was detected at 170000 mg/kg and 4-methyl-2-pentanone at 31000 mg/kg. Both of these are used as solvents in the coating industry. In sludge sample CDS-006, xylenes were detected at 5900 µg/kg and toluene at 5000 µg/kg. Xylenes were detected in drum sample CDS-012 (20000 µg/L) and in drum sample CDS-008, xylenes were detected at (1900 µg/L) and toluene at 520 µg/L. Other compounds detected in the sludges and drum samples included acetone at an estimated 200 µg/L, ethylbenzene at 5100 µg/kg, methyl ethyl ketone (MEK or 2-butanone) at an estimated 360 µg/L, and 1,2-dichloroethane at 1400 µg/L.

Of particular concern was the detection of trace amounts of organics in the soil samples (see Table 1.), particularly the trench bottoms, because these indicate the potential for contaminant migration. Toluene was found in sample CDS-018 at 19 µg/kg, an in-situ composite taken from the bottom of trench TR3 approximately three feet below the visible disposal level. It should be noted that toluene and xylenes were also detected in one of the background samples at 44 µg/L and 29 µg/L respectively. This is considered an anomaly, however, since all other background values are below the detection limit or at trace amounts. Also detected in sample CDS-018 was 4-methyl-2-pentanone at an estimated 160 µg/kg. A trace amount of xylene was detected in sample CDS-011, taken from the spoil pile of trench TR2. A relatively high level of the semi-volatile bis(2-ethylhexyl)phthalate was detected in samples CDS-003 and CDS-010, from the bottom of trench TR1 and TR2 respectively, at an estimated 1600 µg/kg.

Formaldehyde was qualitatively found in all three soils taken from the spoil piles (samples CDS-005, 011, and 016) and possibly from the bottom of trench TR2. The values given in Table 1 for concentrations of formaldehyde are estimates, since the analysis of the samples exceeded the holding times and did not meet CLP criteria. The lab considers the detection limit to be 1.1 mg/kg based on analytical results of the CLP blank (Ref. 6). Consequently, only samples CDS-005, CDS-011, and CDS-016 are considered by the lab to positively show formaldehyde

contamination on a qualitative basis. Since CDS-010 shows a level just above the alleged detection limit, it is not certain whether or not this sample actually had formaldehyde.

CONCLUSION

There are three issues of concern, based on the analytical results.

The first issue of concern is the levels of mercury found in the former drum storage area and in the spill area. Both these areas show levels above the 2 mg/kg level of concern, so warrant further evaluation. The boundaries of contamination need to be more clearly defined in these areas through grid sampling.

The second issue of concern is the relatively high levels of certain organic contaminants found in the sludges, particularly toluene, benzene, xylenes, and phenol, and secondarily, the metals found in sludges and drum samples. Toluene and ethylbenzene are irritants and narcotic at high levels (Ref. 7). Xylenes are chronically toxic and phenols are poisonous and caustic (Ref. 7). Cadmium was found in elevated levels in a sludge, zinc was found at levels exceeding the concentrations of concern, and nickel was found at levels exceeding the RAL for drinking water. All these wastes were both containerized and uncontainerized, but the containers showed an advanced state of deterioration. As long as these sludges are present at the site, in either state, the potential for contaminant migration exists.

The third issue of concern is the trace amounts of organics found in the in-situ soils collected from the bottom of the trenches and composites of the spoil pile. These results indicate contaminant migration into the surrounding soil and downward from the disposal area has occurred. The chemicals found include toluene, xylenes, 4-methyl-2-pentanone, bis(2-ethylhexyl)phthalate, and formaldehyde. Formaldehyde, an intense irritant and probable carcinogen (Refs. 5 and 7), was positively identified in all three spoil piles. Since contaminants were found in all three trench bottoms and spoil piles and sludges, it can be assumed that contaminants are migrating everywhere from the disposal area. Such a finding may suggest a follow-up ground water sampling. A variety of options for collecting ground water, from sampling through a hollow-core auger to the installation of monitor wells should be evaluated and considered prior to sampling.

ATTACHMENTS

Tables 1-3
Site Map
Review of CLP Data

REFERENCES

1. TAT Trip Report, Cota Site Assessment, Des Moines, Iowa, TDD# T07-9105-039B, Wood Ramsey OSC.
2. Roberts, Mark, Region VII EPA project OSC, personal communication in reviewing Cota Drum project work plan
3. Iowa Department of Natural Resources, July, 1991, Analytical Results of IDNR Perimeter soil sampling, from the University of Iowa Analytical Services.
4. McClannahan, Mark, 1984, "Median Elemental Composition of Soils", Table in memorandum to Superfund field staff from Department of Health & Human Resources dated January 17, 1985.
5. "Update to Numeric Action Levels for Contaminated Drinking Water Sites" Emergency Response Division April 8, 1991.
6. Harper, Jim, & Claire Ferguson, personal communication, August 29, 1991, Mid-Pacific Environmental Laboratory, Mountain View, CA (Cota Drum Site contract laboratory).
7. The Merck Index, 11th edition, 1989, Merck & Co., Inc., Rahway, New Jersey.

TABLES 1-3
Cota Drum Site

EM00160QAA/9110016

TABLE 1. Summary of Significant Results

A. Sludges

		CDS-001	CDS-002	CDS-004	CDS-006	CDS-007	CDS-009	CDS-015	CDS-019	CDS-020	CDS-021
ASBESTOS	%	U	NA	U	NA	NA	NA	TR	NA	NA	NA
BARIUM	mg/kg	NA	U	U	200	U	U	U	1100	U	U
CADMIUM	mg/kg	NA	U	U	U	U	6.0	U	33	U	U
LEAD	mg/kg	NA	33	36	19	46	28	8	260	U	U
MERCURY	mg/kg	NA	0.43	0.21	0.27	1.18	4.6	1.5	5.2	U	0.46
ZINC	mg/kg	NA	U	U	54	35	130	22	290	U	U
TOLUENE	µg/kg	NA	NA	NA	5000	880000	U	NA	NA	17E7	U
3-METHYL-2-PENTANONE	µg/kg	NA	NA	NA	U	U	U	NA	NA	31E6	U
XYLENES	µg/kg	NA	NA	NA	5900	U	1100	NA	NA	U	U

B. Liquids, Drum Samples

		CDS-008	CDS-012	CDS-013
ACETONE	µg/L	U	U	200(J)
LEAD	µg/L	U	U	35
ZINC	µg/L	U	U	340
TOLUENE	µg/L	520	U	58(J)
ETHYLBENZENE	µg/L	180	5100	U
XYLENES	µg/L	1900	20000	U
METHYL ETHYL KETONE	µg/L	U	U	360(J)
1,2-DICHLOROETHANE	µg/L	1400	U	U
4-METHYL-2-PENTANONE	µg/L	180	U	160(J)
PHENOL	µg/L	U	11000(J)	4600(J)

C. Soils

		CDS-003	CDS-005	CDS-010	CDS-011	CDS-016	CDS-017	CDS-018	CDS-022	CDS-023
ASBESTOS	%	NA	NA	NA	NA	NA	NA	NA	U	U
BARIUM	mg/kg	210	220	U	U	210	238	260	U	260
CADMIUM	mg/kg	U	U	U	U	6.3	11	U	U	6.1
LEAD	mg/kg	27	23	12	28	44	59(J)	11(J)	4.7	110(J)
MERCURY	mg/kg	U	0.25(J)	.2(UJ)	0.73(J)	4.3(J)	0.65(J)	U	16	9.0(J)
ZINC	mg/kg	57	64	27	68	92	155	60	1500	150
TOLUENE	µg/kg	U	U	U	U	U	U	19	NA	NA
XYLENES	µg/kg	U	U	U	3	U	U	U	NA	NA
BIS(2-ETHYLHEXYL)										
PHTHALATE	µg/kg	1600(J)	U	1600(J)	U	U	U	U	NA	NA
4-METHYL-2-PENTANONE	µg/kg	U	U	U	U	U	U	160(J)	NA	NA
FORMALDEHYDE	mg/kg	U	2.6	U	7.5	2.6	NA	U	NA	NA

D. Background Soils (from IDNR report, Ref. 5)

		1	2	3	4	5	EXPLANATION OF CODES
BARIUM	mg/kg	230	210	210	220	250	NA = Constituent not analysed
CADMIUM	mg/kg	<2	<2	<2	<2	<2	U = Non-detect
LEAD	mg/kg	28	26	23	17	22	UJ = Constituent may or may not be present
MERCURY	mg/kg	<1	<1	<1	<1	<1	J = Estimated Value
ZINC	mg/kg	64	60	54	57	56	E = Exponential Notation
TOLUENE	µg/kg	<2	2	<2	44	3	
XYLENES	µg/kg	<5	<5	<5	29	<5	
EXTRACTABLE							
HYDROCARBONS	µg/kg	4	5	5	7	8	
ASBESTOS	%	0	0	0	0	0	

TABLE 2. HASCAT SUMMARY

SAMPLE NO.	DATE/LOCATION	HASCAT SUMMARY						
		HNU	pH	oxidizer	lead	mercury	asbestos I	asbestos II
CDS-001	7/15/91/TR-1	NT	NT	neg	pos	neg	pos	neg
CDS-002	7/15/91/TR-1	NT	NT	neg	pos	neg	pos	neg
CDS-004	7/15/91/TR-1	NT	NT	neg	pos	neg	pos	neg
CDS-006	7/15/91/TR-2	2	6	neg	inc	neg	NT	NT
CDS-008	7/15/91/TR-2	15	7	neg	pos	neg	NT	NT
CDS-009	7/16/91/TR-2	<1	7	neg	pos	neg	NT	NT
CDS-012	7/16/91/TR-2	25	6	neg	neg	neg	NT	NT
CDS-013	7/16/91/TR-2	NT	9	neg	inc	neg	NT	NT
CDS-014	7/16/91/TR-2	NT	7	neg	inc	inc	NT	NT
CDS-015	7/16/91/TR-3(E-W)	NT	7	neg	pos	neg	NT	NT
CDS-019	7/17/91/TR-3(N-S)	NT	7	pos	pos	neg	inc	neg

EXPLANATION:

All samples were non-reactive in water

All samples were non-combustible

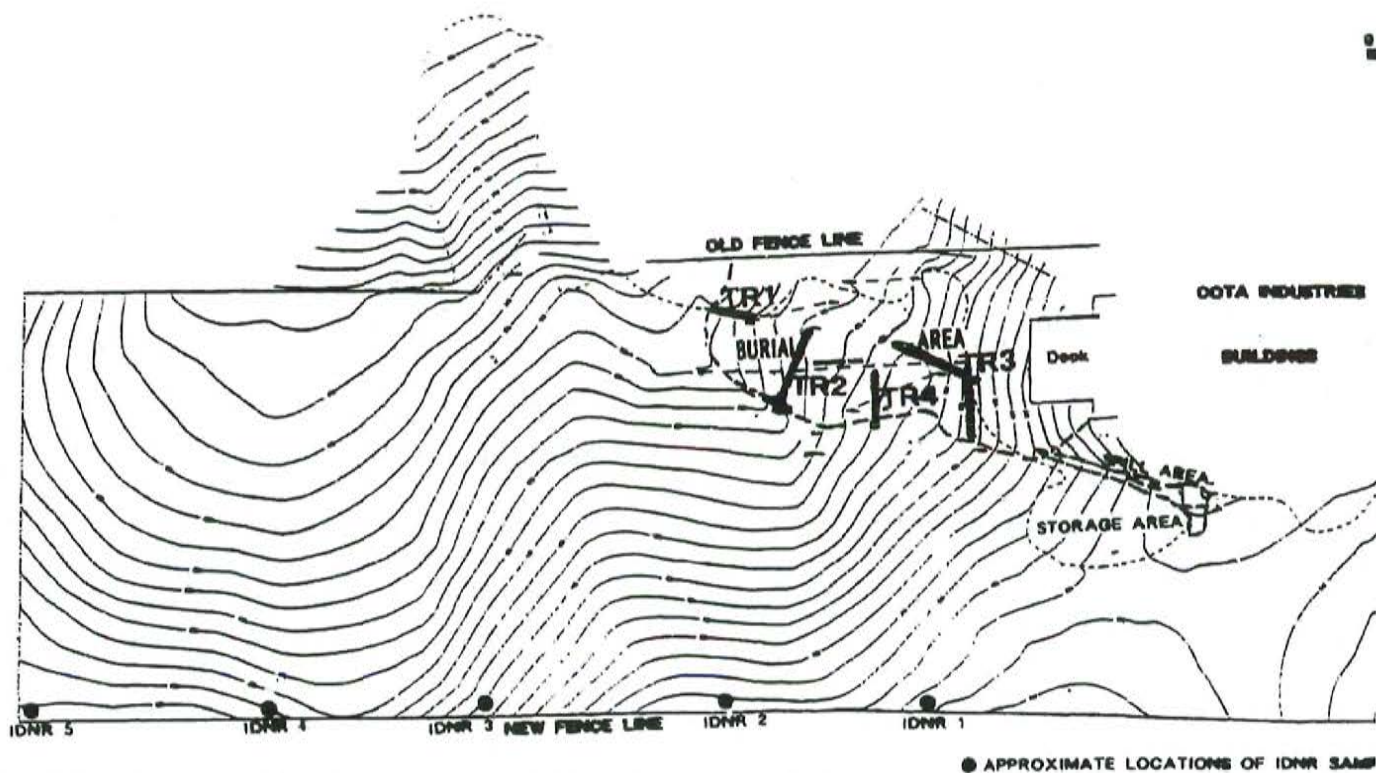
NT = not tested

inc = inconclusive, in most cases due to color of sample

HNU readings in ppm

TABLE 3. SAMPLING SUMMARY

SAMPLE NO.	LOCATION	DESCRIPTION	ANALYSES REQUESTED
CDS-001	TR-1	GRAB, PRODUCT SOLIDS	ASBESTOS
CDS-002	TR-1	COMPOSITE, PRODUCT SOLIDS	TOTAL METALS
CDS-003	TR-1	COMPOSITE, TRENCH BOTTOM AT 6 FEET	BNA, VOAS, TOTAL METALS, FORMALDEHYDE
CDS-004	TR-1	COMPOSITE, PRODUCT SOLIDS	ASBESTOS, TOTAL METALS
CDS-005	TR-1	COMPOSITE OF SPOIL PILE	BNA, VOAS, TOTAL METALS, FORMALDEHYDE
CDS-006	TR-2	COMPOSITE OF DRUM SPILL	BNA, VOAS, TOTAL METALS
CDS-007	TR-2	GRAB, SLUDGE FROM 2 GALLON BUCKET	BNA, VOAS, TOTAL METALS
CDS-008	TR-2	DRUM # TR-2-03	BNA, VOAS, TOTAL METALS
CDS-009	TR-2	GRAB, SLUDGE FROM 5 GALLON DRUM	BNA, VOAS, TOTAL METALS
CDS-010	TR-2	COMPOSITE, TRENCH BOTTOM AT 6 FEET	BNA, VOAS, TOTAL METALS, FORMALDEHYDE
CDS-011	TR-2	COMPOSITE OF SPOIL PILE	BNA, VOAS, TOTAL METALS, FORMALDEHYDE
CDS-012	TR-2	DRUM # TR-2-04	BNA, VOAS, TOTAL METALS
CDS-013	TR-2	DRUM # TR-2-02	BNA, VOAS, TOTAL METALS
CDS-014	TR-2	DRUM # TR-2-01	NOT SUBMITTED FOR ANALYSIS
CDS-015	TR-3(E-W)	GRAB, WHITE POWDER ORIGINALLY IN BAG	ASBESTOS, TOTAL METALS
CDS-016	TR-3(E-W)	COMPOSITE SPOIL PILE	BNA, VOAS, TOTAL METALS, FORMALDEHYDE
CDS-017	TR-3(E-W)	DUPLICATE OF CDS-016	BNA, VOAS, TOTAL METALS
CDS-018	TR-3(E-W)	COMPOSITE, TRENCH BOTTOM AT 6 FEET	BNA, VOAS, TOTAL METALS, FORMALDEHYDE
CDS-019	TR-3(N-S)	GRAB, RED SOLID PRODUCT	TOTAL METALS
CDS-020	TR-4	GRAB, WHITE SEMI-LIQUID, 50 PPM HNU	BNA, VOAS, TOTAL METALS
CDS-021	TR-4	GRAB, GREY-BLUE CRYSTALLINE SUBSTANCE	BNA, VOAS, TOTAL METALS
CDS-022	SPILL AREA	COMPOSITE, PAINT SLUDGE AND SOIL	ASBESTOS, TOTAL METALS
CDS-023	FOUNDER STAGING AREA	SOIL COMPOSITE	ASBESTOS, TOTAL METALS



COTA DRUM SITE, POLK COUNTY, DES MOINES

SITE MAP

TDD# T07-9110-016

PAN# EIA-0160-QAA

SITE MAP
Cota Drum Site

EM00160QAA/9110016

REVIEW OF CLP DATA

Cota Drum Site

EM00160QAA/9110016



ecology and environment, inc.

CLOVERLEAF BUILDING 3, 6406 METCALF, OVERLAND PARK, KANSAS 66202, TEL. 913/432-9961

International Specialists in the Environment

MEMORANDUM

TO: Paul Doherty, EPA/DPO

FROM: Audra Gier, E & E/TAT *AG*
Janice Frizzell, E & E/TAT *JF*
Dermot Kerin, E & E/TAT

THRU: Joe Chandler, E & E/TAT *JC*

DATE: October 30, 1991

SUBJECT: Review of data for Cota Drum samples
TDD#: T07-9110-016
PAN#: EIA0160QAA
EPA OSC: Mark Roberts

cc: Joe Parish, E & E TAT Project Manager

The Ecology & Environment, Inc., Technical Assistance Team (TAT) conducted a review of the analytical data for the samples from the Cota Drum site which were collected under TDD T-07-9105-039B.

Twenty-one samples (one water, eight soils and twelve sludges) were submitted to Mid-Pacific Environmental Laboratory, Inc. in Mountain View, California, for analyses for 23 Target Compound List (TCL) total metals, volatile organic analytes (VOAs) and base/neutral and acid extractable analytes (BNAs or semi-volatiles). TAT conducted a QA2 level review of the data, as described in OSWER Directive 9360.4-01 (Ref. 2), using the guidelines contained in Region VII Standard Operating Procedure (SOP) #1610.2A (Ref. 1). The codes used in conjunction with the data are as follows (Ref. 1 and 2):

- J = The associated value is an estimated quantity because the reported concentrations did not meet quality control criteria.
- R = The sample results are rejected (analyte may or may not be present) due to gross deficiencies in quality control criteria. Any reported value is unusable. Resampling and/or reanalysis is necessary for verification.
- UJ = The material was analyzed for but was not detected. The reported detection limit is estimated because quality control criteria were not met.

U = The material was analyzed for but was not detected above the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

The over-all quality of the data was acceptable. It should be remembered that Contract Laboratory Program (CLP) protocols are intended for soil and water samples and that some of the matrices submitted (i.e. sludges) may be inappropriate for CLP protocols. Possible matrix interference was noted in all of the analyses as indicated by poor surrogate recoveries, poor matrix-spike recoveries and loss of internal standards.

The samples were originally analyzed according to SW-846 (Ref. 3) methodology and reported under the laboratory's criteria for commercial analyses. Those results were transmitted to the EPA On-Scene Coordinator (OSC) and the TAT Project Manager when they were received by TAT's Analytical Services. Subsequently, a CLP data package was requested. The laboratory submitted the raw data to the CLP software and generated a data package. It was this data package which was reviewed. Data were coded, as described above, using CLP criteria. The regeneration of data had little over-all effect on the results. It should be noted that the original results were uncorrected for percent moisture, which is required by the CLP protocol. The original results are, therefore, somewhat lower than those reported in the CLP package. The detection limits originally reported are also lower than those reported under the CLP protocol because of differences in the quality control criteria used by the laboratory for commercial analyses and those required under CLP protocols.

Surrogate recoveries for several samples analyzed for BNAs were sufficiently poor to require qualification or rejection of data under the CLP protocol. The reviewer also applied these criteria to the BNA data originally reported and qualified or rejected values for those samples. These samples were the only data reviewed from the originally reported results for BNAs.

The original VOA data contained incorrect values for sample 020. The laboratory erroneously reported them as ug/mg instead of mg/kg. Therefore, the original data were under-reported by a factor of 1000. The original data for that sample was rejected, as is indicated on the attached data tables. The CLP values are correctly reported.

All laboratory data reviewed will be filed in the TAT files and will be available if needed. If E & E TAT can be of further assistance to EPA, please contact us.

APPENDIX

A. Review of Data for Total Metals and Data Summary Tables with Review Codes

B. Review of Data for Volatile Organic Analytes and Data Summary Tables with Review Codes

C. Review of Data for Semi-Volatile Organic Analytes and Data Summary Tables with Review Codes

REFERENCES

1. USEPA, Region VII Environmental Services Division, Operations & Quality Assurance Manual. Procedures referenced by SOP #:

#1610.3A: USEPA Hazardous Site Evaluation Division, "Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses", July 1, 1988, revision.

#1610.4A: USEPA Hazardous Site Evaluation Division, "Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses", February 1, 1988, revision.
2. USEPA, Office of Solid Waste and Emergency Response, OSWER Directive 9360.4-01, Quality Assurance/Quality Control Guidance for Removal Activities, April 1990, Washington, DC, EPA/540/G-90/004.
3. USEPA, Office of Solid Waste and Emergency Response, Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Washington, DC, November 1986.

APPENDIX A

Review of Data for Total Metals

COTA DRUM SITE

COTA DRUM SITE
Review of Data for Total Metals

Reviewed by: Janice Frizzell, E & E TAT
Date: October 12, 1991

These data were reviewed according to the "Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses", July 1, 1988, revision (Ref. 1). CLP protocol was requested and followed for total metals in water and soils.

Laboratory: Mid-Pacific Environmental Laboratory, Inc., Mountain View, California

Analysis: 23 TCL total metals

Matrix: Water

Samples: CDS008, 012, 013 (Even though these samples were all run as waters, only CDS008 was identified as a water sample on the Chain-of-Custody form.

Matrix: Soil

Samples: CDS003, 005, 010, 011, 016, 017, 018, 023

Matrix: Sludge

Samples: CDS002, 004, 006, 007, 009, 015, 019, 020, 021, 022

HOLDING TIMES

All required holding times for metals were met.

CALIBRATION

The correct number of blanks and standards were run for each of the analyses. All of the correlation coefficients met criteria. All analytical results for the initial and continuing calibration verification standards (ICV and CCV) were within control limits except sodium, which is J-coded as an estimated value.

BLANKS

All blanks were analyzed at appropriate intervals. Two of the continuing calibration blanks run by Inductively Coupled Plasma (ICP) analysis had potassium levels above the Instrument Detection Level (IDL) but below the reported sample results. No action was taken.

ICP INTERFERENCE CHECK SAMPLE (ICS)

All ICS results fell within required control limits, and ICSs were run at appropriate intervals. The calculations checked for ICS percent Recovery (%R) were correctly reported.

LABORATORY CONTROL SAMPLE (LCS)

All aqueous and solid LCS results fell within required control limits. The calculations checked for LCS %R were correctly reported.

DUPLICATE SAMPLE ANALYSIS

All water and soil sample matrices were J-coded as estimated values for the following analytes which fell outside appropriate control windows:

Water: Samples CDS008, 012, 013 were J-coded for iron only.

Soil: All soil samples were J-coded for manganese, mercury, aluminum, chromium, lead, potassium, sodium and vanadium.

All other analytes were within required control windows. The calculations checked for Relative Percent Difference (RPD) were correctly reported.

MATRIX SPIKE SAMPLE ANALYSIS

Samples CDS003 and CDS018 contained several analytes which were qualified for failing to meet quality control criteria. Antimony and selenium in CDS003 were UJ-coded as estimated but not detected. Arsenic, lead, manganese, and selenium in CDS018 were J-coded as estimated values. All other analytes met control criteria for these analyses. The calculations checked for (%R) were correctly reported. Because CLP protocol was not requested originally, post-digestion spikes, required under CLP protocol, were not run on analytes that did not meet control requirements.

FURNACE ATOMIC ABSORPTION QC

All soil samples were analyzed using Inductively Coupled Argon Plasma spectroscopy or Atomic Absorption spectrophotometry following EPA methodology, which was indicated in the original report. Since CLP protocol was not requested originally, duplicate injections, furnace-post-digestion spikes, and Method of Standard Additions (MSA) were not run for these analyses.

ICP SERIAL DILUTION

Samples CDS003 and CDS022 had several analytes which were J-coded for failing to meet criteria for ICP serial dilution. Aluminum, barium, calcium, iron, magnesium, and manganese were J-coded in CDS003. Aluminum, calcium, iron, and zinc were J-coded in CDS022. All other analytes met criteria. No evidence of negative interference was found in the dilutions. The calculations checked for percent Difference (%D) were correctly reported.

SAMPLE RESULT VERIFICATIONS

Any discrepancies found in the raw data or in transcription were resolved through contact with the laboratory. No ICP results were used for final sample-result reports of arsenic, thallium, selenium, or lead.

FIELD DUPLICATES

Field duplicate analyses results are comparable for samples CDS016 and CDS017 which were the only field duplicates submitted.

OVER-ALL ASSESSMENT OF DATA

The over-all quality of the data for the metals analyses is acceptable, based on matrix spike and other QA/QC results. The originally reported

values were not corrected for percent moisture. They are reported as lower than the values listed on the CLP forms, which were corrected for percent moisture. The attached data summary tables show both the data originally reported and the CLP data. Only the CLP data were reviewed.

REFERENCES

References are those listed in the memorandum to which this report is attached.

COTA DRUM SITE
TOTAL METALS RESULTS
October 1991

	CDS-002 mg/kg		CDS-003 mg/kg		CDS-004 mg/kg		CDS-005 mg/kg		CDS-006 mg/kg		CDS-007 mg/kg	
	CLP	Orig.	CLP	Orig.	CLP	Orig.	CLP	Orig.	CLP	Orig.	CLP	Orig.
Aluminum	3200	6800	12000 J	9150	5800	5100	10000 J	7570	7500	5940	5600	3370
Antimony	60 U	<10	60 UJ	<10	60 U	<10	60 U	<10	60 U	<10	60 U	<10
Arsenic	10 U	<1.0	11	8.4	10 U	1.7	10 U	4.4	10 U	4.5	10 U	1.2
Barium	200 U	23.2	210	163	200 U	111	220	164	200	129	200 U	43.0
Beryllium	5 U	<1.0	5 U	<1.0	5 U	<1.0	5 U	<1.0	5 U	<1.0	5 U	<1.0
Cadmium	5 U	<1.0	5 U	<1.0	5 U	<1.0	5 U	<1.0	5 U	<1.0	5 U	<1.0
Calcium	130000	107000	5000 U	3340	120000	105000	7100	5150	5000 U	3030	5800	3490
Chromium	12	10.0	12 J	8.9	50	43.2	10 J	7.5	10 U	7.1	10 U	2.2
Cobalt	50 U	<2.0	50 U	8.2	50 U	3.9	50 U	9.6	50 U	7.4	50 U	2.6
Copper	25 U	7.1	25 U	18.1	25 U	3.7	25 U	16.1	25 U	14.0	25 U	6.8
Iron	960 J	788	18000	14300	2700	2390	18000	13400	17000	13300	13000	8130
Lead	13	10.8	27 J	20.7	36	14.0	23 J	16.9	19	15.2	46	28.1
Magnesium	5400	4440	5000 U	3010	11000	9550	5000 U	2170	5000 U	1700	5000 U	758
Manganese	20	16.2	1400 J	1090	870	762	1100 J	816	770	614	310	189
Mercury	0.43	0.36	0.2 U	0.14	0.21	0.18	0.25 J	0.18	0.27	0.21	1.18	0.17
Nickel	40 U	9.7	40 U	22.9	50	43.8	40 U	19.8	40 U	15.6	40 U	7.0
Potassium	5000 U	398	5000 U	1130	5000 U	320	5000 U	1670	5000 U	1100	5000 U	604
Selenium	5 U	<1.0	5 UJ	<1.0	5 U	<1.0	5 U	<1.0	5 U	<1.0	5 U	<1.0
Silver	10 U	<2.0	10 U	<2.0	10 U	<2.0	10 U	<2.0	10 U	<2.0	10 U	<2.0
Sodium	5000 U	288	5000 U	212	5000 U	500	5000 U	239	5000 U	235	5000 U	220
Thallium	10 U	<1.0	10 U	<1.0	10 U	<1.0	10 U	<1.0	10 U	<1.0	10 U	<1.0
Vanadium	50 U	5.5	50 U	20.8	50 U	5.9	50 U	19.3	50 U	16.4	50 U	9.4
Zinc	20 U	6.6	57	44.2	20 U	9.5	64	47.1	54	43.3	35	21.2

The following codes were used in reviewing the data:

J = The associated value is an estimated quantity because the reported concentrations did not meet quality control criteria.

N/A = Data are not available for this compound.

R = The sample results are rejected (analyte may or may not be present) due to gross deficiencies in quality control criteria. A unusable. Resampling and/or reanalysis is necessary for verification.

UJ = The material was analyzed for but was not detected. The reported detection limit is estimated because quality control criteria were unusable.

U = The material was analyzed for but was not detected. The associated value is either the sample quantitation limit or the sample detection limit.

Note: CLP non-detect values are contract required detection limits (CRDL). Positive CLP values are given to two significant figures. Orig. available in TAT files. The data originally submitted by the Laboratory were not reviewed, are reported above as received from the percent moisture.

UJ = The material was analyzed but was not detected. The reported detection limit is estimated because quality control criteria were not met.

R = The sample results are rejected (analysis may or may not be present) due to gross deficiencies in quality control criteria.

N/A = Data are not available for this component.

J = The associated value is an estimated quantity because the reported concentrations did not meet quality control criteria.

[illegible]

COZA DRUM SITE
TOTAL METALS RESULTS (Continued)
October 1991

	CDS-017		CDS-018		CDS-019		CDS-020		CDS-021		CDS-022	
	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
	CLP	Orig.	CLP	Orig.	CLP	Orig.	CLP	Orig.	CLP	Orig.	CLP	Orig.
Aluminum	15000	12600	19000 J	15400	15000	12000	5500	4590	200 U	57.5	3400	3340
Antimony	60 U	<10	60 U	<10	60 U	<10	60 U	<10	60 U	<10	60 U	<10
Arsenic	10 U	5.3	10 U	5.3	10 U	4.7	10 U	<1.0	10 U	<1.0	10 U	<1.0
Barium	238	202	260	208	1100	905	200 U	<2.0	200 U	<2.0	200 U	9.3
Beryllium	5 U	<1.0	5 U	<1.0	5 U	<1.0	5 U	<1.0	5 U	<1.0	5 U	<1.0
Cadmium	11	7.9	5 U	<1.0	33	26.6	5 U	<1.0	5 U	<1.0	5 U	<1.0
Calcium	7800	6500	5000 U	2340	130000	109000	19000	15700	5000 U	128	71000	70600
Chromium	21 J	17.2	21	17.0	100	85	10 U	<2.0	10 U	<2.0	10 U	<2.0
Cobalt	50 U	11.4	50 U	7.8	50 U	13.1	10 U	<2.0	50 U	<2.0	50 U	<2.0
Copper	129	115	25 U	11.9	490	402	25 U	<2.0	25 U	<2.0	25 U	3.0
Iron	26000	20500	20000	16400	29000	23600	340 U	282	390	341	1900	1890
Lead	59 J	44.1	11 J	10.3	260	210	3 U	1.3	3 U	<0.1	4.7	4.6
Magnesium	5000 U	2940	5000 U	3170	24000	19300	5000 U	302	5000 U	25.9	5000 U	1110
Manganese	1100 J	926	1100 J	854	630	511	15	12.7	15	4.7	78	77.6
Mercury	0.65 J	0.54	0.2 U	0.16	5.2	4.3	0.2 U	0.14	0.46	0.4	16	16.3
Nickel	40 U	21.8	40 U	20.2	150	122	40 U	<4.0	40 U	<4.0	40 U	<4.0
Potassium	5000 J	2630	5000 U	2670	5000 U	2630	5000 U	594	5000 U	48	5000 U	308
Selenium	5 U	<1.0	5 UJ	<1.0	5 U	<1.0	5 U	<1.0	5 U	<1.0	5 U	<1.0
Silver	5 U	<2.0	10 U	<2.0	10 U	<2.0	10 U	<2.0	5 U	<2.0	10 U	<2.0
Sodium	5000 J	288	5000 U	288	5000 U	514	5000 U	356	5000 U	267	5000 U	312
Thallium	10 U	<1.0	10 U	<1.0	10 U	<1.0	10 U	<1.0	10 U	<1.0	10 U	<1.0
Vanadium	50 U	30.6	50 U	35.5	50 U	22.3	50 U	<2.0	50 U	<2.0	50 U	2.2
Zinc	155	124	60	48.2	290	238	20 U	5.3	20 U	3.3	1500	1510

The following codes were used in reviewing the data:

J = The associated value is an estimated quantity because the reported concentrations did not meet quality control criteria.

N/A = Data are not available for this compound.

R = The sample results are rejected (analyte may or may not be present) due to gross deficiencies in quality control criteria. An unusable. Resampling and/or reanalysis is necessary for verification.

UJ = The material was analyzed for but was not detected. The reported detection limit is estimated because quality control criteria were not met.

U = The material was analyzed for but was not detected. The associated value is either the sample quantitation limit or the sample detection limit. Positive CLP values are given to two significant figures. Original values are given in TAT files. The data originally submitted by the Laboratory were not reviewed, are reported above as received from the Laboratory.

APPENDIX B

Review of Data for Volatile Organic Compounds

COTA DRUM SITE

EIA0160QAA/9110016

COTA DRUM SITE
Review of Data for Analyses for Volatile Organic Compounds

Reviewed by: Dermot Kerin, E & E TAT
Date: October 12, 1991

These data were reviewed according to the Region VII Standard Operating Procedure (SOP) 1610.4A (Ref. 1). The level of review was QA2 as described in OSWER Directive 9360.4-01 (Ref. 2). The following comments, and attached tables of data, are the result of the Ecology & Environment, Inc., Technical Assistance Team (TAT) review of the data for the analyses for volatile organic analytes (VOAs).

Laboratory: Mid-Pacific Environmental Laboratory, Inc. Mountain View, CA

Analyses: Volatile Organic Analytes (VOAs)

Matrix: Solids and Liquids

Sample #: CDS003, 005, 010, 011, 016, 017, 018 were analyzed as low-level soils.

006, 007, 009, 020, 021 were analyzed as medium-level soils.

008, 012, 013 were analyzed as low-level waters.

HOLDING TIMES

The holding times for soils is currently under investigation and the holding times for preserved water samples is 14 days.

Sample 008 was preserved and analyzed as a water sample. The sample was analyzed within the required holding time. Samples 012 and 013 were analyzed as waters but were not preserved because they were collected as liquid-sludge samples.

GC/MS TUNING

Both instruments 150A and 150B passed the ion abundance mass calibration criteria, and all samples were analyzed within the required 12-hour time limit.

CALIBRATION

Initial Calibration

All Relative Response Factors (RRF) were within acceptable limits for both instruments 150A and 150B.

All percent Relative Standard Deviations (%RSD) were within required limits except for chloromethane and acetone on instrument 150A. No samples were effected.

All ZRSD were within required limits for instrument 150B.

Continuing Calibration

All RRFs were within required limits.

All ZRSD were within required limits for both instruments each day except for:

- 1) Vinyl chloride and acetone on 7-19 on instrument 150A. No samples were effected.
- 2) 2-Butanone on 7-22 on instrument 150A. No samples were effected.
- 3) Chloromethane and chloroethane on 7-24 on instrument 150B. No samples were effected.
- 4) Chloroethane on 7-25 on instrument 150B. No samples were effected.
- 5) 1,1-Dichloroethane and 1-butanone on 7-26 on instrument which effected a J-code for 2-butanone in sample 013.

BLANKS

There was no contamination in any of the blanks except for:

- 1) Acetone and toluene in VBLK05 on 7-19. No samples were effected.
- 2) Methylene chloride and toluene in VBLK03 on 7-23. No samples were effected.

SURROGATE RECOVERY

All three surrogates were recovered within acceptable limits for each sample except toluene-d8 in sample 013 and VBLK07 which effected J-codes for all positive results of sample 013 and UJ-codes for all undetected results in the same two samples.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

All Relative Percent Differences (%RPD) between the matrix spike and matrix spike duplicate recoveries were within advisory limits.

FIELD DUPLICATES

The duplicate sample results are comparable.

INTERNAL STANDARD PERFORMANCE

Internal standard area counts were within advisory limits for all samples.

Retention Times (RT) variances from sample to daily standards were not measured. Compounds were measured in scan numbers.

TCL COMPOUND IDENTIFICATION

Relative Retention Times (RRT) for all compounds in each sample were within advisory limits.

Relative intensities for all ions in the standard mass spectra were within advisory limits.

COMPOUND QUANTITATION AND REPORTED DETECTION LIMITS

The correct internal standards, quantitation ions and RRFs were used to quantitate compounds.

The Contract Required Detection Limits (CRDL) have been adjusted correctly for dilutions and dry weight factors for all samples.

The correct calculations were performed to determine sample concentrations.

TENTATIVELY IDENTIFIED COMPOUNDS

All Tentatively Identified Compounds (TIC) passed ion and intensity criteria. TICs found in VBLK02 and VBLK05 were also found in samples run on the same day.

SYSTEM PERFORMANCE

The system performance appeared to pass minimal performance criteria.

OVER-ALL ASSESSMENT OF DATA FOR VOLATILES

The over-all quality of the data in this package was acceptable. Most of the QA/QC factors were within specifications except where matrix interferences had an effect on surrogate recovery. The units for sample CDS-020 were reported incorrectly on the original reports submitted for results only. The actual units of measurement for this particular sample are mg/kg, not ug/kg, as stated. Therefore, the original data were under-reported by a factor of 1000. The CLP values were correctly reported. The original data were rejected on the attached data summary tables. This was the only examination of the original data done at this time.

REFERENCES

References are those in the memorandum to which this report is attached.

COTA DEEP SITE
VOLATILE ORGANIC RESULTS
October 1991

	CDS-003		CDS-005		CDS-006		CDS-007		C
	CLP	Orig.	CLP	Orig.	CLP	Orig.	CLP	Orig.	CLP
Chloromethane	13 U	<3	14 U	<3	1500 U	<380	79000 U	<15000	100 U
Bromomethane	13 U	<2	14 U	<2	1500 U	<250	79000 U	<10000	100 U
Vinyl chloride	13 U	<3	14 U	<3	1500 U	<380	79000 U	<15000	100 U
Chloroethane	13 U	<2	14 U	<2	1500 U	<250	79000 U	<10000	100 U
Methylene chloride	13 U	<2	14 U	<2	1500 U	<250	79000 U	<10000	100 U
Acetone	13 U	<5	14 U	<5	1500 U	<630	79000 U	<25000	100 U
Carbon disulfide	13 U	<3	14 U	<3	1500 U	<380	79000 U	<15000	100 U
1,1-Dichloroethene	13 U	<3	14 U	<3	1500 U	<380	79000 U	<15000	100 U
1,1-Dichloroethane	13 U	<3	14 U	<3	1500 U	<380	79000 U	<15000	100 U
*1,2-Dichloroethene	13 U	<2	14 U	<2	1500 U	<250	79000 U	<10000	100 U
Chloroform	13 U	<2	14 U	<2	1500 U	<250	79000 U	<10000	100 U
1,2-Dichloroethane	13 U	<2	14 U	<2	1500 U	<250	79000 U	<10000	1400
2-Butanone	13 U	<5	14 U	<5	1500 U	<630	79000 U	<25000	100 U
1,1,1-Trichloroethane	13 U	<3	14 U	<3	1500 U	<380	79000 U	<15000	100 U
Carbon tetrachloride	13 U	<3	14 U	<3	1500 U	<380	79000 U	<15000	100 U
Bromodichloromethane	13 U	<3	14 U	<3	1500 U	<380	79000 U	<15000	100 U
1,2-Dichloropropane	13 U	<3	14 U	<3	1500 U	<380	79000 U	<15000	100 U
cis-1,3-Dichloropropene	13 U	<3	14 U	<3	1500 U	<380	79000 U	<15000	100 U
Trichloroethene	13 U	<2	14 U	<2	1500 U	<380	79000 U	<10000	100 U
Dibromochloromethane	13 U	<2	14 U	<2	1500 U	<250	79000 U	<10000	100 U
1,1,2-Trichloroethane	13 U	<2	14 U	<2	1500 U	<250	79000 U	<10000	100 U
Benzene	13 U	<2	14 U	<2	1500 U	<250	79000 U	<10000	100 U
trans-1,3-Dichloropropene	13 U	<2	14 U	<2	1500 U	<250	79000 U	<10000	100 U
Bromoform	13 U	<2	14 U	<2	1500 U	<250	79000 U	<10000	100 U
4-Methyl-2-Pentanone	13 U	<5	14 U	<5	1500 U	<630	79000 U	<25000	180
2-Hexanone	13 U	<5	14 U	<5	1500 U	<630	79000 U	<25000	100 U

COSTA RICA SITE
VOLATILE ORGANIC RESULTS (Continued)
October 1991

	CDS-003		CDS-005		CDS-006		CDS-007		CDS
	CLP	Orig.	CLP	Orig.	CLP	Orig.	CLP	Orig.	u
	ug/kg		ug/kg		ug/kg		ug/kg		
Tetrachloroethene	13 U	<2	14 U	<2	1500 U	<250	79000 U	<10000	100 U
1,1,2,2-Tetrachloroethane	13 U	<3	14 U	<3	1500 U	<380	79000 U	<13000	100 U
Toluene	13 U	<2	14 U	4	5000	4000	880000	54000	520
Chlorobenzene	13 U	<2	14 U	<2	1500 U	<250	79000 U	<10000	100 U
Ethylbenzene	13 U	<2	14 U	<2	1500 U	<250	79000 U	<10000	180
Styrene	13 U	<2	14 U	<2	1500 U	<250	79000 U	<10000	100 U
Xylene (total)	13 U	<2	14 U	<2	5900	4800	79000 U	<10000	1900
Trichlorofluoromethane	N/A	<3	N/A	<3	N/A	<350	N/A	<15000	N/A
Vinyl acetate	N/A	<3	N/A	<5	N/A	<630	N/A	<25000	N/A
2-Chloroethylvinylether	N/A	<5	N/A	<5	N/A	<630	N/A	<25000	N/A

* CLP data are for total 1,2-dichloroethene. Original data are for trans-1,2-Dichloroethene.

The following codes were used in reviewing the data:

- J = The associated value is an estimated quantity because the reported concentrations did not meet quality control criteria.
- N/A = Data are not available for this compound.
- R = The sample results are rejected (analyte may or may not be present) due to gross deficiencies in quality control criteria. A value is unusable. Resampling and/or reanalysis is necessary for verification.
- UJ = The material was analyzed for but was not detected. The reported detection limit is estimated because quality control criteria met.
- U = The material was analyzed for but was not detected. The associated value is either the sample quantitation limit or the sample detection limit.

Note: CLP non-detect values are contract required detection limits (CRDL). Positive CLP values are given to two significant figures. Or data are available in TAT files. The data originally submitted by the Laboratory were not reviewed, are reported above as received laboratory and are percent moisture.

COEA DEEM SITE
VOLATILE ORGANIC RESULTS (Continued)
October 1991

	CDS-009		CDS-010		CDS-011		CDS-012		C
	CLP	Orig.	CLP	Orig.	CLP	Orig.	CLP	Orig.	
	ug/kg		ug/kg		ug/L		ug/kg		
Chloromethane	3200 U	<380	14 U	<3	14 U	<3	2000 U	<600	50 UJ
Bromomethane	3200 U	<250	14 U	<2	14 U	<2	2000 U	<400	50 UJ
Vinyl chloride	3200 U	<380	14 U	<3	14 U	<3	2000 U	<600	50 UJ
Chloroethane	3200 U	<250	14 U	<2	14 U	<2	2000 U	<400	50 UJ
Methylene chloride	3200 U	<250	14 U	<2	14 U	<2	2000 U	<400	50 UJ
Acetone	3200 U	<630	14 U	<5	14 U	<5	2000 U	<1000	200 J
Carbon disulfide	3200 U	<380	14 U	<3	14 U	<3	2000 U	<600	50 UJ
1,1-Dichloroethene	3200 U	<380	14 U	<3	14 U	<3	2000 U	<600	50 UJ
1,1-Dichloroethane	3200 U	<380	14 U	<3	14 U	<3	2000 U	<600	50 UJ
*1,2-Dichloroethane	3200 U	<250	14 U	<2	14 U	<2	2000 U	<400	50 UJ
Chloroform	3200 U	<250	14 U	<2	14 U	<2	2000 U	<400	50 UJ
1,2-Dichloroethane	3200 U	<250	14 U	<2	14 U	<2	2000 U	<400	50 UJ
2-Butanone	3200 U	<630	14 U	<5	14 U	<5	2000 U	<1000	360 J
1,1,1-Trichloroethane	3200 U	<380	14 U	<3	14 U	<3	2000 U	<600	50 UJ
Carbon tetrachloride	3200 U	<380	14 U	<3	14 U	<3	2000 U	<600	50 UJ
Bromodichloromethane	3200 U	<380	14 U	<3	14 U	<3	2000 U	<600	50 UJ
1,2-Dichloropropane	3200 U	<380	14 U	<3	14 U	<3	2000 U	<600	50 UJ
cis-1,3-Dichloropropene	3200 U	<380	14 U	<3	14 U	<3	2000 U	<600	50 UJ
Trichloroethene	3200 U	<250	14 U	6	14 U	<2	2000 U	<400	50 UJ
Dibromochloromethane	3200 U	<250	14 U	<2	14 U	<2	2000 U	<400	50 UJ
1,1,2-Trichloroethane	3200 U	<250	14 U	<2	14 U	<2	2000 U	<400	50 UJ
Benzene	3200 U	<250	14 U	5	14 U	<2	2000 U	<400	50 UJ
trans-1,3-Dichloropropene	3200 U	<250	14 U	<2	14 U	<2	2000 U	<400	50 UJ
Bromoform	3200 U	<250	14 U	<2	14 U	<2	2000 U	<400	50 UJ
4-Methyl-2-Pentanone	3200 U	<630	14 U	<5	14 U	<5	2000 U	<1000	160 J
2-Hexanone	3200 U	<630	14 U	<5	14 U	<5	2000 U	<1000	50 UJ

CDDA BURN SITE
VOLATILE ORGANIC RESULTS (Continued)
October 1991

	CDE-009		CDE-010		CDE-011		CDE-012		C
	CLP	ug/kg	CLP	ug/kg	CLP	ug/L	CLP	ug/kg	
Tetrachloroethane	3200 U	<250	14 U	<2	14 U	<2	2000 U	<400	50 U7
1,1,2,2-Tetrachloroethane	3200 U	<380	14 U	<3	14 U	<3	2000 U	<600	50 U7
Toluene	3200 U	900	14 U	5	14 U	3	2000 U	1300	58 J
Chlorobenzene	3200 U	<250	14 U	3	14 U	<2	2000 U	<400	50 U7
Ethylbenzene	3200 U	530	14 U	<2	14 U	<2	5100	5100	50 U7
Styrene	3200 U	<250	14 U	<2	14 U	<2	2000 U	<400	50 U7
Xylene (total)	11000	4100	14 U	<2	14 U	3	20000	18000	50 U7
Trichlorofluoromethane	N/A	<300	N/A	<3	N/A	<3	N/A	<600	N/A
Vinyl Acetate	N/A	<630	N/A	<5	N/A	<5	N/A	<1000	N/A
2-chloroethylvinyl ether	N/A	<630	N/A	<5	N/A	<5	N/A	<1000	N/A

* CLP data are for 1,2-dichloroethane. Original data are for trans-1,2-dichloroethane.

The following codes were used in reviewing the data:

- J = The associated value is an estimated quantity because the reported concentrations did not meet quality control criteria.
- N/A = Data are not available for this compound.
- R = The sample results are rejected (analyses may or may not be present) due to gross deficiencies in quality control criteria. Value is unusable. Resampling and/or reanalysis is necessary for verification.
- U7 = The material was analyzed for but was not detected. The reported detection limit is estimated because quality control criteria met.
- U = The material was analyzed for but was not detected. The associated value is either the sample quantitation limit or the sample detection limit.

Note: CLP non-detect values are contract required detection limits (CDDL). Positive CLP values are given to two significant figures. O data are available in TMT files. The data originally submitted by the laboratory were not reviewed, are reported above as received laboratory and are percent moisture.

COTA DRUM SITE
VOLATILE ORGANIC RESULTS (Continued)
October 1991

	CDS-016		CDS-017		CDS-018		CDS-020		CLP
	CLP	Orig.	CLP	Orig.	CLP	Orig.	CLP	Orig.	
	ug/kg		ug/kg		ug/kg		ug/kg		
Chloromethane	12 U	<3	12 U	<3	12 U	<3	11000000 U	R	2800
Bromomethane	12 U	<2	12 U	<2	12 U	<2	11000000 U	R	2800
Vinyl chloride	12 U	<3	12 U	<3	12 U	<3	11000000 U	R	2800
Chloroethane	12 U	<2	12 U	<2	12 U	<2	11000000 U	R	2800
Methylene chloride	12 U	<2	12 U	4	12 U	<2	11000000 U	R	2800
Acetone	12 U	<5	12 U	7	12 U	<5	11000000 U	R	2800
Carbon disulfide	12 U	<3	12 U	<3	12 U	<3	11000000 U	R	2800
1,1-Dichloroethene	12 U	<3	12 U	<3	12 U	<3	11000000 U	R	2800
1,1-Dichloroethane	12 U	<3	12 U	<3	12 U	<3	11000000 U	R	2800
1,2-Dichloroethene (total)	12 U	<2	12 U	<2	12 U	<2	11000000 U	R	2800
Chloroform	12 U	<2	12 U	<2	12 U	<2	11000000 U	R	2800
1,2-Dichloroethane	12 U	<2	12 U	<2	12 U	<2	11000000 U	R	2800
2-Butanone	12 U	<5	12 U	<5	12 U	<5	11000000 U	R	2800
1,1,1-Trichloroethane	12 U	<3	12 U	<3	12 U	<3	11000000 U	R	2800
Carbon tetrachloride	12 U	<3	12 U	<3	12 U	<3	11000000 U	R	2800
Bromodichloromethane	12 U	<3	12 U	<3	12 U	<3	11000000 U	R	2800
1,2-Dichloropropane	12 U	<3	12 U	<3	12 U	<3	11000000 U	R	2800
cis-1,3-Dichloropropene	12 U	<3	12 U	<3	12 U	<3	11000000 U	R	2800
Trichloroethene	12 U	<2	12 U	<2	12 U	<2	11000000 U	R	2800
Dibromochloromethane	12 U	<2	12 U	<2	12 U	<2	11000000 U	R	2800
1,1,2-Trichloroethane	12 U	<2	12 U	<2	12 U	<2	11000000 U	R	2800
Benzene	12 U	<2	12 U	<2	12 U	<2	11000000 U	R	2800
trans-1,3-Dichloropropene	12 U	<2	12 U	<2	12 U	<2	11000000 U	R	19000
Bromoform	12 U	<2	12 U	<2	12 U	<2	11000000 U	R	2800
4-Methyl-2-Pentanone	12 U	<5	12 U	<5	160	130	31000000	R	2800
2-Hexanone	12 U	<5	12 U	<5	12 U	<5	11000000 U	R	2800

COTA DRUM SITE
VOLATILE ORGANIC RESULTS (Continued)
October 1991

	CDS-016		CDS-017		CDS-018		CDS-020		CLP
	CLP	Orig.	CLP	Orig.	CLP	Orig.	CLP	Orig.	
	ug/kg		ug/kg		ug/kg		ug/kg		
Tetrachloroethene	12 U	<2	12 U	<2	12 U	<2	11000000 U	R	2800 U
1,1,2,2-Tetrachloroethane	12 U	<3	12 U	<3	12 U	<3	11000000 U	R	2800 U
Toluene	12 U	3	12 U	9	19	15	170000000	R	4600 U
Chlorobenzene	12 U	<2	12 U	<2	12 U	<2	11000000 U	R	2800 U
Ethylbenzene	12 U	<2	12 U	<2	12 U	<2	11000000 U	R	2800 U
Styrene	12 U	<2	12 U	<2	12 U	<2	11000000 U	R	2800 U
Xylene (total)	12 U	<2	12 U	<2	12 U	<2	11000000 U	R	2800 U
Trichlorofluoroethane	N/A	<3	N/A	<3	N/A	<3	N/A	R	N/A
Vinylacetate	N/A	<5	N/A	<5	N/A	<5	N/A	R	N/A
2-Chlorovinylether	N/A	<5	N/A	<5	N/A	<5	N/A	R	N/A

* CLP data are for 1,2-dichloroethane. Original data are for trans-1,2-dichloroethane.

The following codes were used in reviewing the data:

- J = The associated value is an estimated quantity because the reported concentrations did not meet quality control criteria.
- N/A = Data are not available for this compound.
- R = The sample results are rejected (analyte may or may not be present) due to gross deficiencies in quality control criteria. A reported value is unusable. Resampling and/or reanalysis is necessary for verification.
- UJ = The material was analyzed for but was not detected. The reported detection limit is estimated because quality control criteria were not met.
- U = The material was analyzed for but was not detected. The associated value is either the sample quantitation limit or the sample detection limit.

Note: CLP non-detect values are contract required detection limits (CRDL). Positive CLP values are given to two significant figures. Original CLP data are available in TAT files. The data originally submitted by the Laboratory were not reviewed, are reported above as received from the laboratory and are percent moisture.

APPENDIX C

Review of Data for Semi-Volatile Organic Compounds

COTA DRUM SITE

COTA DRUM SITE
Review of Data for Analyses for Semi-Volatile Organic Compounds

Reviewed by: Audra Gier, E & E TAT
Date: October 14, 1991

These data were reviewed according to the Region VII Standard Operating Procedure (SOP) 1610.4A (Ref. 1). The level of review was QA2 as described in OSVER Directive 9360.4-01 (Ref. 2). The following comments, and attached data sheets, are the result of the Ecology & Environment, Inc., Technical Assistance Team (TAT) review of the data for the analysis of base/neutral or acid extractable compounds (BNAs or semi-volatile organic compounds).

Laboratory: Mid-Pacific Environmental Laboratory, Inc. Mountain View, CA

Analyses: Base/Neutral or Acid Extractable Compounds (BNAs or Semi-Volatiles)

Matrix: Solids and Liquids

Sample #: CDS003, 005, 006, 007, 009, 010, 011, 016, 017,
018, 020, 021 were analyzed as soils
008, 012, 013 were analyzed as waters

HOLDING TIMES

Holding times have been established only for water samples. Holding times for soils and solids are under investigation. Although three samples (008, 012 and 013) were treated as waters by the laboratory because they were liquids, only sample 008 was identified as a water on the Chain of Custody (COC). Samples 012 and 013 were identified as drum samples. Samples 008, 012 and 013 were extracted within seven days of collection, which met holding-time requirements.

GCMS TUNING

All ion abundance criteria were met on the day of the initial calibration and for each day that samples were analyzed. All samples were analyzed on the same instrument and were analyzed within the required 12-hour time limit.

CALIBRATION

Initial Calibration

Relative Response Factors (RRFs) were within acceptable limits. Percent Relative Standard Deviations (%RSD) were within acceptable limits except for the following four compounds, which were not found in any of the samples analyzed: 3-nitroaniline, 2,4-dinitrophenol, 4-nitrophenol and 4,6-dinitro-2-methylphenol.

Continuing Calibration

All RRFs were within required limits for each day that samples were analyzed. Most compounds showed percent Differences (XD) between Initial and Continuing Calibrations which were within the required limits. However, for each day, several compounds showed XD greater than 25 per cent. None of these compounds were reported in any of the samples, so no samples were effected.

BLANKS

Blanks were run for each matrix. No contaminants were found in concentrations equal to or greater than the Contract Required Detection Limits (CRDL).

SURROGATE RECOVERY

Surrogate recoveries were outside control limits for several samples. The laboratory found the samples could not be concentrated normally during the extraction process and dilution was required before analysis. Recoveries from the laboratory's control samples (blanks) were within control limits. Poor surrogate recovery requires the reviewer to qualify positive values as estimated values (J) and to qualify compounds that are not detected as having estimated sample quantitation limits (UJ). If surrogate recoveries are less than ten per cent, positive results must be qualified as estimated values (J) and negative results must be designated as unusable (R).

Four soil samples (016, 017, 020 and 021) and the three liquid samples (008, 012 and 013) were effected. Surrogate recoveries for samples 016 and 017 required qualifying all data as estimated values (J). Recoveries for surrogates in samples 020 and 021 and samples 008, 012 and 013 were sufficiently poor (0%-4%) to require rejecting (R) all results for them. It should be noted that the data originally reported by the laboratory under its commercial criteria indicated the same problems with surrogate recoveries and those data are qualified, on the attached data summary tables, according to these same criteria. Only these samples from the original BNA data were evaluated.

MATRIX SPIKE/MATRIX SPIKE DUPLICATES

Matrix spike (MS) and matrix spike duplicate (MSD) samples were run appropriately--one for each matrix. Only one of the eleven compounds in the spiking solution was within Quality Control (QC) limits for percent Recovery (XR) for samples 008MS and 008MSD or for XRSD, confirming the matrix problems indicated by the poor surrogate recoveries.

The soil MS/MSD samples were within QC limits on both XR and XRSD.

FIELD DUPLICATES

On the COC, sample 017 is identified as a duplicate of sample 016. These samples were difficult to extract and required further dilution before analysis, which contributed to the poor surrogate recoveries. The two samples contained different Tentitively Identified Compounds (TICs) except for 1,2-benzene dicarboxylic acid (phthallic acid) which was found in both. No calculation of RPD was attempted.

INTERNAL STANDARDS PERFORMANCE

Retention times (RT), as given on the Semi-Volatile Internal Standard Area and RT Summary (Form VIII), are within control limits. The raw data showed scan numbers instead of RTs.

All internal standard area counts were within the required limits of the associated calibration standard. Area counts were confirmed for each calibration standard for each day and were found to be acceptable. Internal standard area counts for all samples were found to be within acceptable limits except for sample 021 which was below acceptable limits for chrysene-d12 and perylene-d12 and sample 008MSD which was outside limits for all six internal standards. This would qualify all values, positive and non-detect, as estimated quantities for compounds associated with these internal standards.

TCL COMPOUND IDENTIFICATION

All compounds were correctly identified based on examination of RRTs and spectra.

COMPOUND QUANTITATION AND REPORTED DETECTION LIMITS

Compounds were quantitated on the appropriate internal standards, quantitation ions and RRFs. All reported quantitation limits were properly adjusted to reflect sample dilutions, concentration and dry weight factors. Calculations were verified for all positive values.

It should be noted that the laboratory originally reported values which were not corrected for percent moisture. Only two samples were affected: 003 and 010. Originally, each of these samples was reported to contain 1200 ug/kg of bis(2-ethylhexyl)phthalate. When reported on a dry-weight basis, under the CLP protocol, the values were increased to 1600 ug/kg. The original data were reported under the laboratory's commercial protocol.

TENTATIVELY IDENTIFIED COMPOUNDS

All Tentatively Identified Compounds (TICs) passed both ion and intensity criteria. The blank used for the samples analysed as soils contained no TICs. The water blank contained five TICs, none of which were identified in the associated samples. All values for TICs are estimated quantities.

SYSTEM PERFORMANCE

The system performance appeared to pass minimal performance criteria for these samples.

OVER-ALL ASSESSMENT OF DATA

The over-all quality of the data for BNAs (semi-volatile organics) was acceptable. Most of the quality control factors were within required limits except where matrix problems had an effect on surrogate recoveries. Detection levels are elevated for most of the samples because dilutions were required.

The attached data summary tables also reflect both the values which were originally reported by the laboratory and the data later generated under the CLP protocol. The data that were reviewed were the CLP data. For

BNAs, only two positive values were affected, the bis(2-ethylhexyl)phthalate reported for samples 003 and 010. Under CLP protocol, detection levels are higher for all samples than those reported originally. Even though the quantitation limits are different in the two sets of data, they are comparable and the apparent differences seem to result only from the percent moisture correction.

Discussions with laboratory personnel indicated that the original data could also be reviewed under the CLP guidelines (Ref. 1). Therefore, those samples effected by poor surrogate recoveries were reviewed and qualified as indicated on the summary tables attached.

As a result of this review, and for reasons described in this report, all positive values and quantitation limits for several samples reported under the CLP protocol were flagged as estimated values (J-coded). Values for seven samples were rejected because of poor surrogate recoveries.

REFERENCES

See references listed in the cover memorandum accompanying this report.

COXA DRUM SITE
SEMI-VOLATILE ORGANIC RESULTS
OCTOBER 1991

	CDS-003		CDS-005		CDS-006		CDS-007		CD
	CLP ug/kg	Orig.	CLP ug/kg	Orig.	CLP ug/kg	Orig.	CLP ug/kg	Orig.	
Phenol	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Bis(2-chloroethyl)ether	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
2-Chlorophenol	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
1,3-Dichlorobenzene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
1,4-Dichlorobenzene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Benzyl alcohol	N/A	<1300	N/A	<1300	N/A	<6700	N/A	<13000	N/A
1,2-Dichlorobenzene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
2-Methylphenol	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Bis(2-chloroisopropyl)ether	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
4-Methylphenol	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
N-Nitroso-di-n-propylamine	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Hexachloroethane	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Nitrobenzene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Isophorone	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
2-Nitrophenol	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
2,4-Dimethylphenol	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Benzoic acid	N/A	<3400	N/A	<3400	N/A	<17000	N/A	<33000	N/A
Bis(2-chloroethoxy)methane	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
2,4-Dichlorophenol	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
1,2,4-Trichlorobenzene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Naphthalene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
4-Chloroaniline	860 U	<1300	900 U	<1300	4100 U	<6700	11000 U	<13000	R
Hexachlorobutadiene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
4-Chloro-3-methylphenol	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
2-Methylnaphthalene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Hexachlorocyclopentadiene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R

COTTA DAM SITE
SEMI-VOLATILE ORGANIC RESULTS (Continued)
OCTOBER 1991

	CDS-003		CDS-005		CDS-006		CDS-007		CD
	CLP	Orig.	CLP	Orig.	CLP	Orig.	CLP	Orig.	
	ug/kg		ug/kg		ug/kg		ug/kg		
2,4,6-Trichlorophenol	360 U	<670	900 U	<670	4100 U	<1300	11000 U	<6700	R
2,4,5-Trichlorophenol	2100 U	<670	1200 U	<670	10000 U	<3100	26000 U	<6700	R
2-Chloronaphthalene	860 U	<3400	900 U	<3400	4100 U	<17000	11000 U	<33000	R
2-Nitroaniline	2100 U	<3400	2200 U	<3400	10000 U	<17000	26000 U	<33000	R
Dimethylphthalate	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Acenaphthylene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
3-Nitroaniline	2100 U	<3400	2200 U	<3400	10000 U	<17000	26000 U	<33000	R
Acenaphthene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
2,4-Dinitrophenol	2100 U	<3400	2200 U	<3400	10000 U	<17000	26000 U	<33000	R
4-Nitrophenol	2100 U	<3400	2200 U	<3400	10000 U	<17000	26000 U	<33000	R
Dibenzofuran	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
2,4-Dinitrocoulene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
2,6-Dinitrocoulene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Diethylphthalate	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
4-Chlorophenyl-phenylether	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Fluorene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
4-Nitroaniline	2100 U	<3400	2200 U	<3400	10000 U	<17000	26000 U	<33000	R
4,6-Dinitro-2-methylphenol	2100 U	<3400	2200 U	<3400	10000 U	<17000	26000 U	<33000	R
N-Nitrosodiphenylamine	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
4-Bromophenyl-phenylether	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Hexachlorobenzene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Pentachlorophenol	2100 U	<3400	2200 U	<3400	10000 U	<17000	26000 U	<33000	R
Phenanthrene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Anthracene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Carbazole	860 U	N/A	900 U	N/A	4100 U	N/A	11000 U	N/A	R
Di-n-butylphthalate	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R

COXA DEBRU SITE
SEMI-VOLATILE ORGANIC RESULTS (Continued)
OCTOBER 1991

	CDS-003		CDS-005		CDS-006		CDS-007		C
	CLP	Orig.	CLP	Orig.	CLP	Orig.	CLP	Orig.	
Fluoranthene	360 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Pyrene	360 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Butylbenzylphthalate	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
3,3'-Dichlorobenzidine	860 U	<1300	900 U	<1300	4100 U	<6700	11000 U	<13000	R
Benzo(a)anthracene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Bis(2-ethylhexyl)phthalate	1600 J	1200 J	900 U	<670	4100 U	<3300	11000 U	<6700	R
Chrysene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Di-n-octylphthalate	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Benzo(b)fluoranthene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Benzo(k)fluoranthene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Benzo(a)pyrene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Indeno(1,2,3-cd)pyrene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Dibenzo(a,h)anthracene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R
Benzo(g,h,i)perylene	860 U	<670	900 U	<670	4100 U	<3300	11000 U	<6700	R

The following codes were used in reviewing the data:

- J = The associated value is an estimated quantity because the reported concentrations did not meet quality control criteria.
- N/A = Data are not available for this compound.
- R = The sample results are rejected (analyte may or may not be present) due to gross deficiencies in quality control criteria. A reported value is unusable. Resampling and/or reanalysis is necessary for verification.
- UJ = The material was analyzed for but was not detected. The reported detection limit is estimated because quality control criteria were not met.
- U = The material was analyzed for but was not detected. The associated value is either the sample quantitation limit or the sample detection limit.

Note: CLP non-detect values are contract required detection limits (CRDL). Positive CLP values are given to two significant figures. The original CLP data are available in TAT files. The data originally submitted by the laboratory were not reviewed, are reported above as received from the laboratory, and are uncorrected for percent moisture.

COYA DRUM SITE
SEMI-VOLATILE ORGANIC RESULTS (Continued)
OCTOBER 1991

	CDS-009		CDS-010		CDS-011		CDS-012		CDS-013		CDS-016	
	ug/kg		ug/kg		ug/kg		ug/L		ug/L		ug/kg	
	CLP	Orig.	CLP	Orig.	CLP	Orig.	CLP	Orig.	CLP	Orig.	CLP	Orig.
Phenol	1800 U	<670	920 U	<670	1800 U	<1300	11000 J	R	4600 J	R	820 UJ	67
bis(2-chloroethyl)ether	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	67
2-Chlorophenol	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	67
1,3-Dichlorobenzene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	67
1,4-Dichlorobenzene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	67
Benzyl alcohol	N/A	<1300	920 U	<1300	N/A	<2700	N/A	R	690 J	H	N/A	130
1,2-Dichlorobenzene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	67
2-Methylphenol	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	67
bis(2-chloroisopropyl)ether	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	67
4-Methylphenol	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	67
N-Nitroso-di-n-propylamine	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	67
Hexachloroethane	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	67
Nitrobenzene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	67
Isophorone	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	67
2-Nitrophenol	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	67
2,4-Dimethylphenol	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	67
Benzoic acid	N/A	<3400	N/A	<3400	N/A	<6700	N/A	R	N/A	R	N/A	3400
bis(2-chloroethoxy)methane	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	67
2,4-Dichlorophenol	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	67
1,2,4-Trichlorobenzene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	67
Naphthalene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	67
4-Chloroaniline	1800 U	<1300	920 U	<1300	1800 U	<2700	2700 UJ	R	690 UJ	R	820 UJ	1300
Hexachlorobutadiene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	67
4-Chloro-3-methylphenol	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	67
2-Methylnaphthalene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	67
Hexachlorocyclopentadiene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	67

COCA DRUG SITE
Semi-Volatile Organic Results (Continued)
OCTOBER 1991

	C06-009		C06-010		C06-011		C06-012		C06-013		C06-014
	CLP	Orig.	CLP	Orig.	CLP	Orig.	CLP	Orig.	CLP	Orig.	CLP
	ug/kg		ug/kg		ug/kg		ug/kg		ug/L		ug/kg
2,3,5-Trichlorophenol	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ
2,4,5-Trichlorophenol	4300 U	<670	2200 U	<670	4300 U	<1300	6600 UJ	R	1700 UJ	R	2000 UJ
2-Chloronaphthalene	1800 U	<3400	920 U	<3400	1800 U	<6700	2700 UJ	R	690 UJ	R	820 UJ
2-Nitroaniline	4300 U	<3400	2200 U	<3400	4300 U	<6700	6600 UJ	R	1700 UJ	R	2000 UJ
Dimethylphthalate	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ
Acenaphthylene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ
3-Nitroaniline	4300 U	<3400	2200 U	<3400	4300 U	<6700	6600 UJ	R	1700 UJ	R	2000 UJ
Acenaphthene	1900 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ
2,4-Dinitrophenol	4300 U	<3400	2200 U	<3400	4300 U	<6700	6600 UJ	R	1700 UJ	R	2000 UJ
4-Nitrophenol	4300 U	<3400	2200 U	<3400	4300 U	<6700	6600 UJ	R	1700 UJ	R	2000 UJ
Dibenzofuran	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ
2,4-Dinitrotoluene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ
2,6-Dinitrotoluene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ
Diethylphthalate	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ
4-Chlorophenylphenylether	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ
Fluorene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ
4-Nitroaniline	4300 U	<3400	2200 U	<3400	4300 U	<6700	6600 UJ	R	1700 UJ	R	2000 UJ
4,6-Dinitro-2-methylphenol	4300 U	<3400	2200 U	<3400	4300 U	<6700	6600 UJ	R	1700 UJ	R	2000 UJ
N-Nitrosodiphenylamine	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ
4-Bromophenyl-phenylether	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ
Hexachlorobenzene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ
Pentachlorophenol	4300 U	<3400	2200 U	<3400	4300 U	<6700	6600 UJ	R	1700 UJ	R	2000 UJ
Phenanthrene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ
Anthracene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ
Carbazole	1800 U	N/A	920 U	N/A	1800 U	N/A	2700 UJ	N/A	690 UJ	N/A	820 UJ
Di-n-butyl-phthalate	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ

COYA DEBR SITE
SEMI-VOLATILE ORGANIC RESULTS (Continued)
OCTOBER 1991

	COS-009		COS-010		COS-011		COS-012		COS-013		COS-016	
	ug/kg		ug/kg		ug/kg		ug/kg		ug/L		ug/kg	
	CLP	Orig.	CLP	Orig.	CLP	Orig.	CLP	Orig.	CLP	Orig.	CLP	Orig.
Fluoranthene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	670
Pyrene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	670
Butylbenzylphthalate	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	670
3,3'-Dichlorobenzidine	1800 U	<1300	920 U	<1300	1800 U	<2700	2700 UJ	R	690 UJ	R	820 UJ	1300
Benzo(a)anthracene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	670
Bis(2-ethylhexyl)phthalate	1800 U	<670	1600 J	1200 J	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	670
Chrysene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	670
Di-n-octyl phthalate	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	670
Benzo(b)fluoranthene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	670
Benzo(k)fluoranthene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	670
Benzo(a)pyrene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	670
Indeno(1,2,3-cd)pyrene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	670
Dibenzo(a,h)anthracene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	670
Benzo(g,h,i)perylene	1800 U	<670	920 U	<670	1800 U	<1300	2700 UJ	R	690 UJ	R	820 UJ	670

The following codes were used in reviewing the data:

- J = The associated value is an estimated quantity because the reported concentrations did not meet quality control criteria.
- N/A = Data are not available for this compound.
- R = The sample results are rejected (analyte may or may not be present) due to gross deficiencies in quality control criteria. A value is unusable.
- Resampling and/or reanalysis is necessary for verification.
- UJ = The material was analyzed for but was not detected. The reported detection limit is estimated because quality control criteria were not met.
- U = The material was analyzed for but was not detected. The associated value is either the sample quantitation limit or the sample limit.

Note: CLP non-detect values are contract required detection limits (CRDL). Positive CLP values are given to two significant figures. Original data are available in TAT files. Unless otherwise noted, the data originally submitted by the laboratory were not reviewed, are reported as received from the laboratory and are uncorrected for percent moisture.

COCA DRUG SITE
SEMI-VOLATILE ORGANIC RESULTS (Continued)
October 1991

	CDS-018		CDS-020		CDS-021	
	CLP	Orig.	CLP	Orig.	CLP	Orig.
	ug/kg		ug/kg		ug/kg	
Phenol	810 U	<670	R	R	R	R
Bis(2-chloroethyl)ether	810 U	<670	R	R	R	R
2-Chlorophenol	810 U	<670	R	R	R	R
1,3-Dichlorobenzene	810 U	<670	R	R	R	R
1,4-Dichlorobenzene	810 U	<670	R	R	R	R
Benzyl alcohol	N/A	<1300	N/A	R	N/A	R
1,2-Dichlorobenzene	810 U	<670	R	R	R	R
2-Methylphenol	810 U	<670	R	R	R	R
Bis(2-Chloroisopropyl)ether	810 U	<670	R	R	R	R
4-Methylphenol	810 U	<670	R	R	R	R
N-Nitroso-di-n-propylamine	810 U	<670	R	R	R	R
Hexachloroethane	810 U	<670	R	R	R	R
Nitrobenzene	810 U	<670	R	R	R	R
Isophorone	810 U	<670	R	R	R	R
2-Nitrophenol	810 U	<670	R	R	R	R
2,4-Dimethylphenol	810 U	<670	R	R	R	R
Benzoic acid	N/A	<3400	N/A	R	N/A	R
Bis(2-chloroethoxy)methane	810 U	<670	R	R	R	R
2,4-Dichlorophenol	810 U	<670	R	R	R	R
1,2,4-Trichlorobenzene	810 U	<670	R	R	R	R
Naphthalene	810 U	<670	R	R	R	R
4-Chloroaniline	810 U	<1300	R	R	R	R
Hexachlorobutadiene	810 U	<670	R	R	R	R
4-Chloro-3-methylphenol	810 U	<670	R	R	R	R
2-Methylnaphthalene	810 U	<670	R	R	R	R
Hexachlorocyclopentadiene	810 U	<670	R	R	R	R

COTTA DRAIN SITE
SEMI-VOLATILE ORGANIC RESULTS (Continued)
October 1991

	CDS-018		CDS-020		CDS-021	
	CLP	Orig.	CLP	Orig.	CLP	Orig.
	ug/kg		ug/kg		ug/kg	
2,4,6-Trichlorophenol	810 U	<670	R	R	R	R
2,4,5-Trichlorophenol	2000 U	<670	R	R	R	R
2-Chloronaphthalene	810 U	<3400	R	R	R	R
2-Nitroaniline	2000 U	<3400	R	R	R	R
Dimethylphthalate	810 U	<670	R	R	R	R
Acenaphthylene	810 U	<670	R	R	R	R
3-Nitroaniline	2000 U	<3400	R	R	R	R
Acenaphthene	810 U	<670	R	R	R	R
3,4-Dinitrophenol	2000 U	<3400	R	R	R	R
4-Nitrophenol	2000 U	<3400	R	R	R	R
Dibenzofuran	810 U	<670	R	R	R	R
2,4-Dinitrotoluene	810 U	<670	R	R	R	R
2,6-Dinitrotoluene	810 U	<670	R	R	R	R
Diethylphthalate	810 U	<670	R	R	R	R
4-Chlorophenyl-phenylether	810 U	<670	R	R	R	R
Fluorene	810 U	<670	R	R	R	R
4-Nitroaniline	2000 U	<3400	R	R	R	R
4,6-Dinitro-2-methylphenol	2000 U	<3400	R	R	R	R
N-Nitrosodiphenylamine	810 U	<670	R	R	R	R
4-Bromophenyl-phenylether	810 U	<670	R	R	R	R
Hexachlorobenzene	810 U	<670	R	R	R	R
Pentachlorophenol	2000 U	<3400	R	R	R	R
Phenanthrene	810 U	<670	R	R	R	R
Anthracene	810 U	<670	R	R	R	R
Carbazole	810 U	N/A	R	N/A	R	N/A
Di-n-butylphthalate	810 U	<670	R	R	R	R

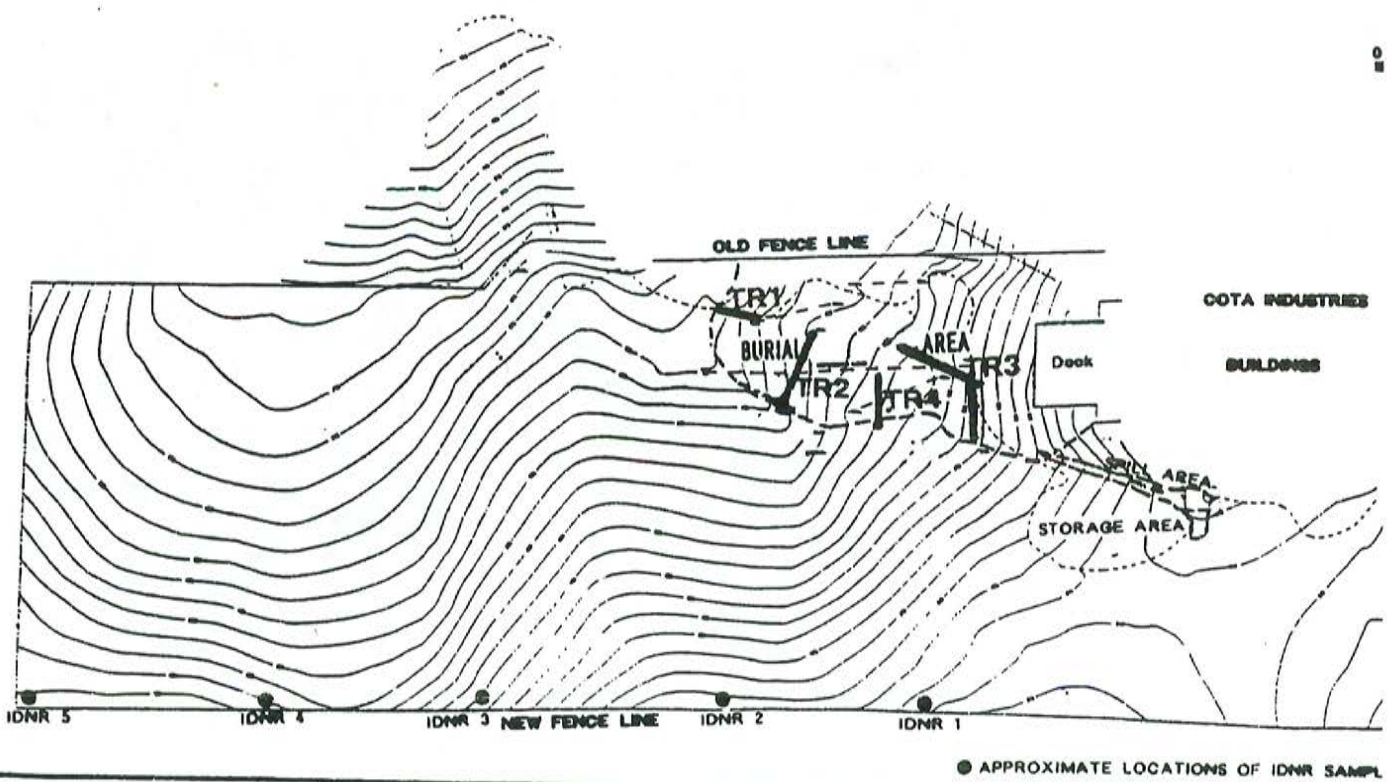
COTA DRUM SITE
SEMI-VOLATILE ORGANIC RESULTS (Continued)
October 1991

	CDS-018		CDS-020		CDS-021	
	CLP	Orig.	CLP	Orig.	CLP	Orig.
Fluoranthene	810 U	<670	R	R	R	R
Pyrene	810 U	<670	R	R	R	R
Butylbenzylphthalate	810 U	<670	R	R	R	R
3,3'-Dichlorobenzidine	810 U	<1300	R	R	R	R
Benzo(a)anthracene	810 U	<670	R	R	R	R
Bis(2-ethylhexyl)phthalate	810 U	<670	R	R	R	R
Chrysene	810 U	<670	R	R	R	R
Di-n-octylphthalate	810 U	<670	R	R	R	R
Benzo(b)fluoranthene	810 U	<670	R	R	R	R
Benzo(k)fluoranthene	810 U	<670	R	R	R	R
Benzo(a)pyrene	810 U	<670	R	R	R	R
Indeno(1,2,3-cd)pyrene	810 U	<670	R	R	R	R
Dibenzo(a,h)anthracene	810 U	<670	R	R	R	R
Benzo(g,h,i)perylene	810 U	<670	R	R	R	R

The following codes were used in reviewing the data:

- J = The associated value is an estimated quantity because the reported concentrations did not meet quality control criteria.
- N/A = Data are not available for this compound.
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- UJ = The material was analyzed for but was not detected. The reported detection limit is estimated because quality control criteria were not met.
- U = The material was analyzed for but was not detected. The associated value is either the sample quantity limit or the sample detection limit.

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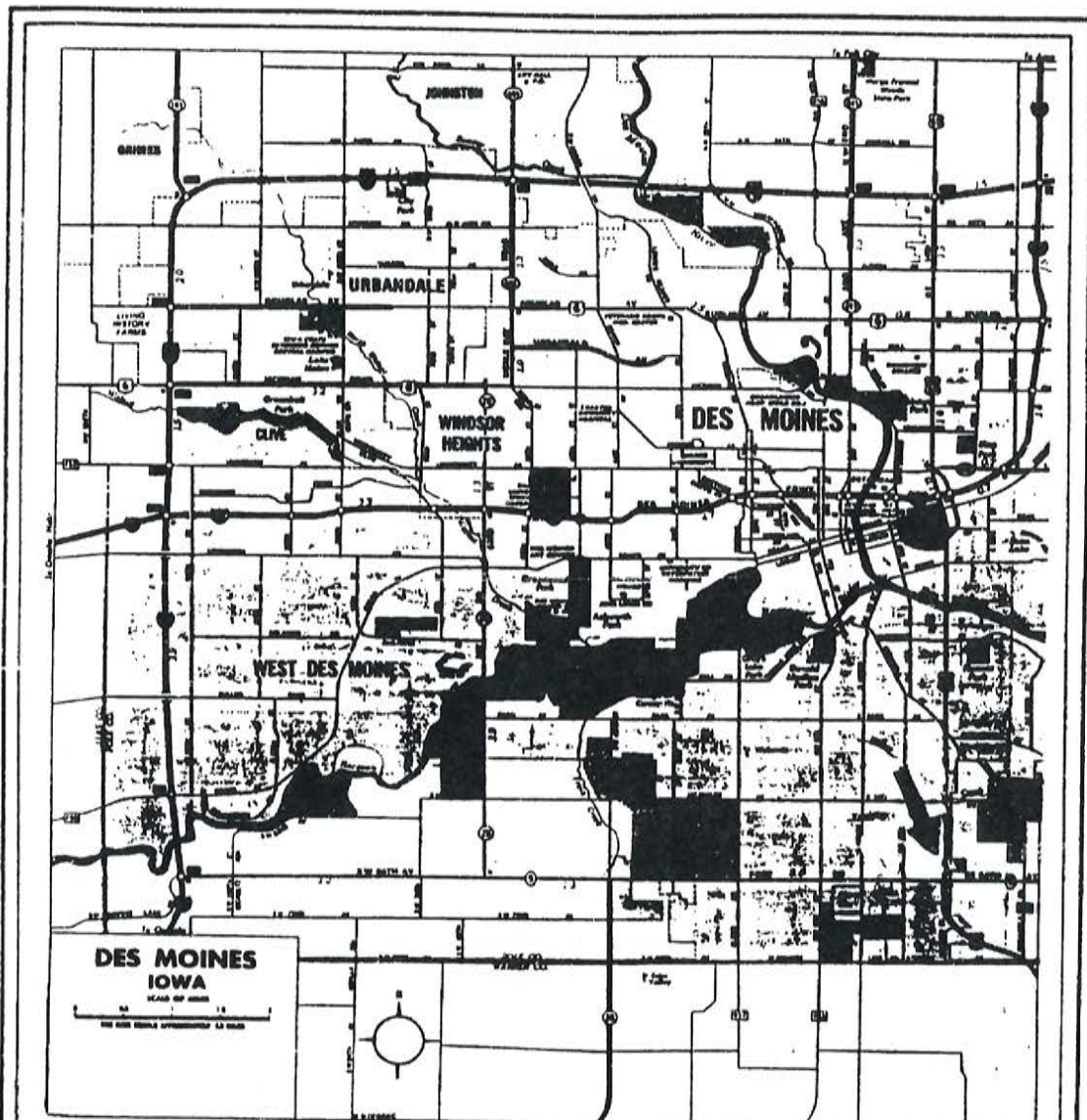


COTA DRUM SITE, POLK COUNTY, DES MOINES

SITE MAP

TDD# T07-9110-016

PAN# EIA-0160-QAA



MAP 1. SITE LOCATOR

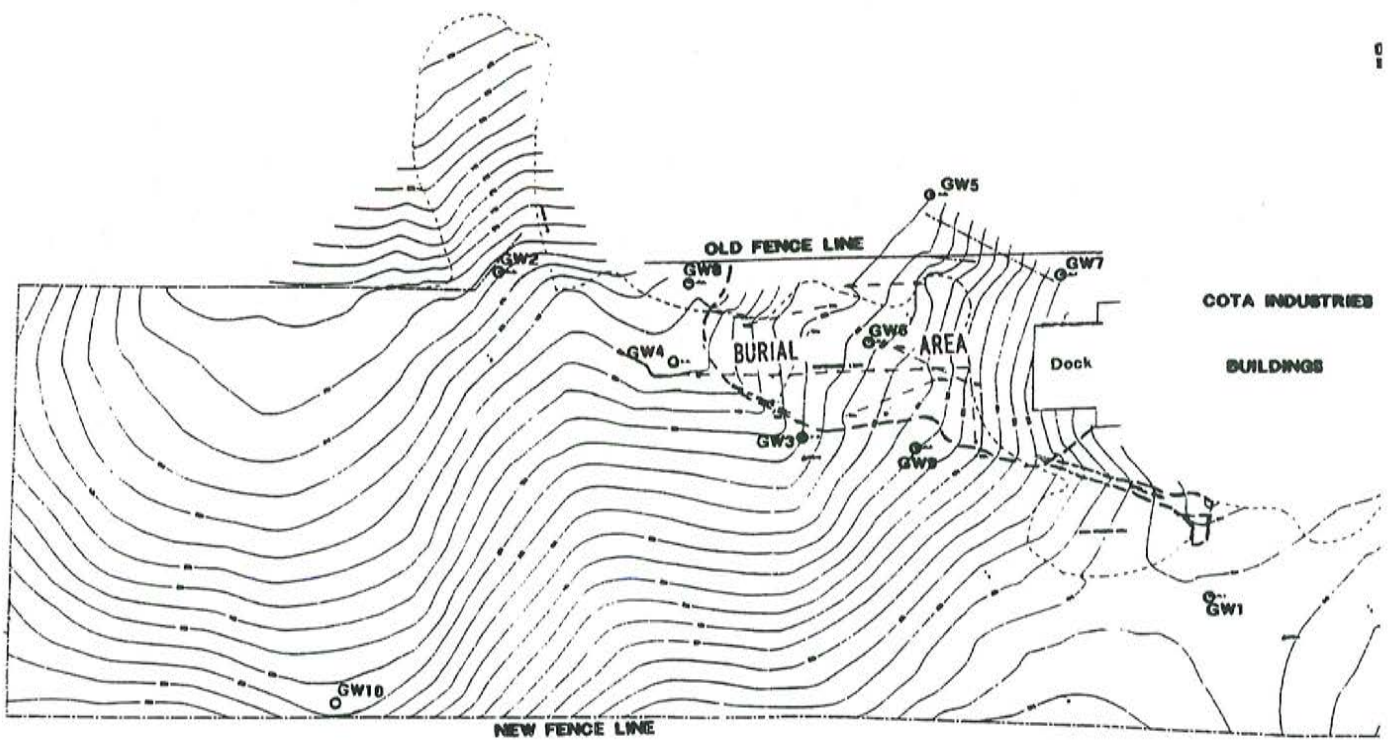
COTA DRUM SITE

POLK COUNTY, DES MOINES, IOWA

5512 S.E. 14th St.

T07-9105-039B

EIA-0160-SBA

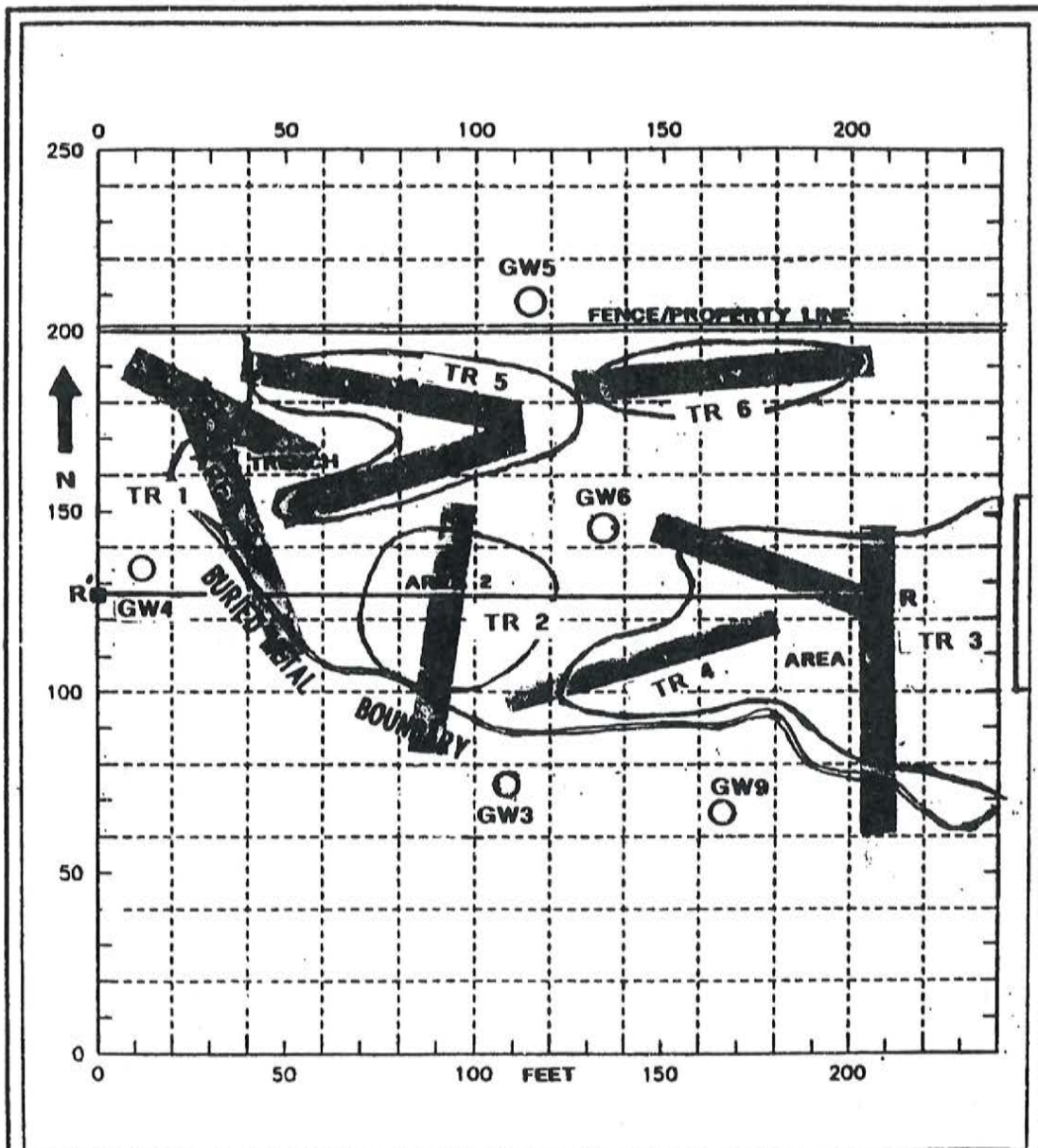


COTA DRUM SITE, POLK COUNTY, DES MOINES

MAP 2. SITE MAP

TDD# T07-9105-039B

PAN# EIA-0160-SBA



COTA DRUM SITE

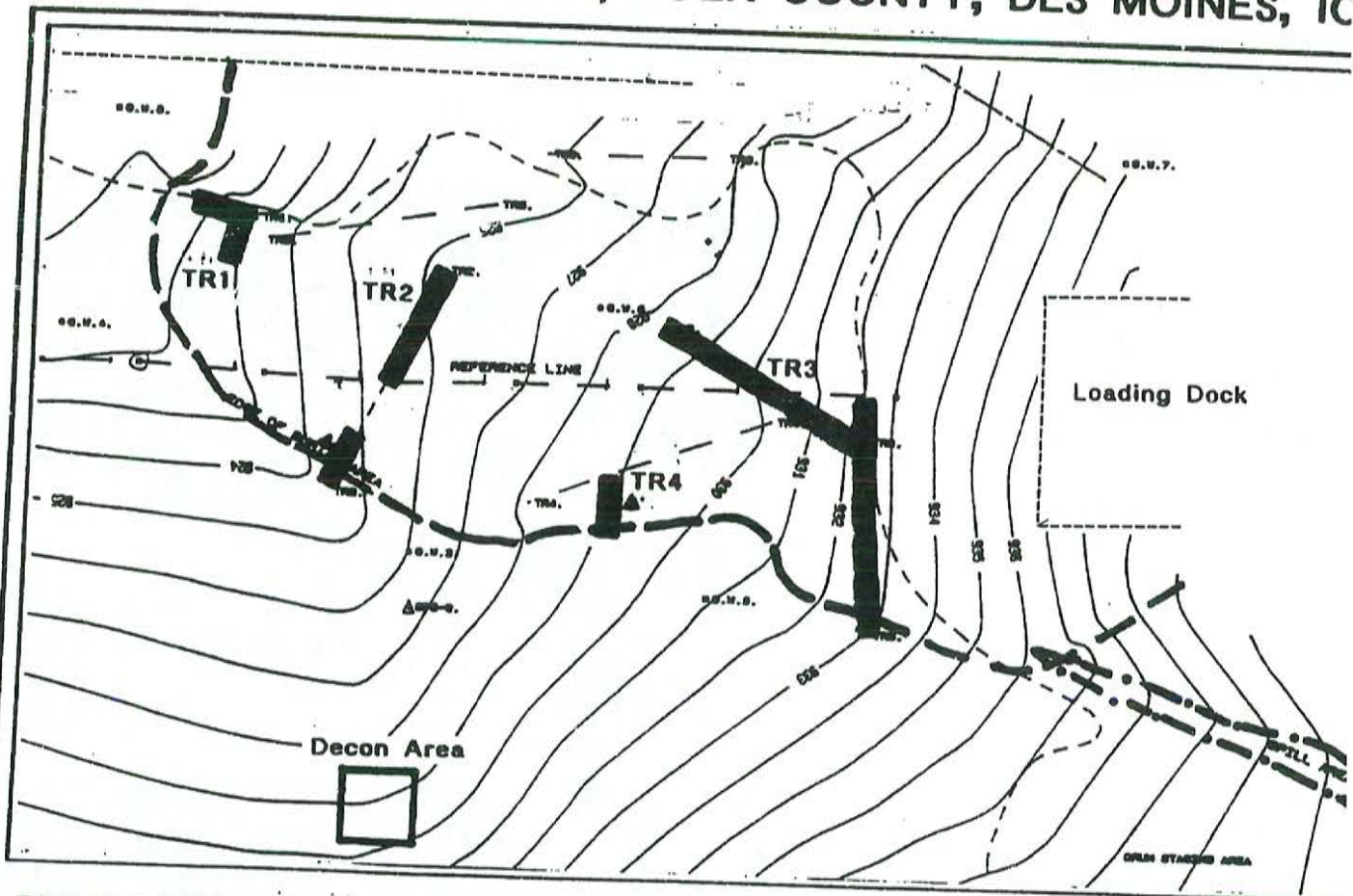
EXPLORATORY TRENCHING LOCATIONS
(PROPOSED)

T07-9105-039B

MAP 3

EIA-0160-SBA

COTA DRUM SITE, POLK COUNTY, DES MOINES, IC



SCALE: 1 INCH = 40 FEET

TDD# T07-9105-039B

PAN# EIA-0160-SBA

MAP 4. ACTUAL EXCAVATED TRENCH LOCATIONS

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Photographic Record

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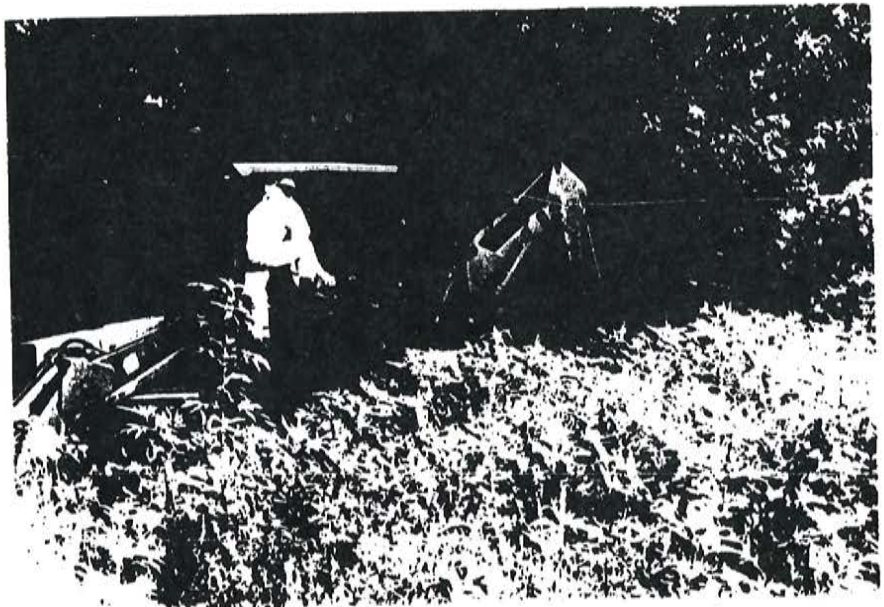
Client: EPA
Camera Make: OLYMPUS OM77AF

E & E Job No.: ZT1071
Serial No. : 1080224

SITE NAME: COTA DRUM SITE
SITE LOCATION: DES MOINES, POLK COUNTY, IOWA
TDD/PAN No.: T07-9105-039/EIA-0160-SBA

Photographer: MARK ROBERTS
Date/Time : 7-15-91/0930
Lens: Type: 50 MM
Serial No.: 102-8199
Frame No. : 1/1
Direction : NNE
Comments :

BACKHOE POSITIONED FOR
INITIATION OF EXCAVATION



Photographer: MARK ROBERTS
Date/Time : 7-15-91/0950
Lens: Type: 50 MM
Serial No.: 102-8199
Frame No. : 1/2
Direction : ENE
Comments :

COLLECTION OF SAMPLE CDS-001
WHITE FRIABLE SOLID, TRENCH 1



Ecology and Environment, Inc.

Photographic Record

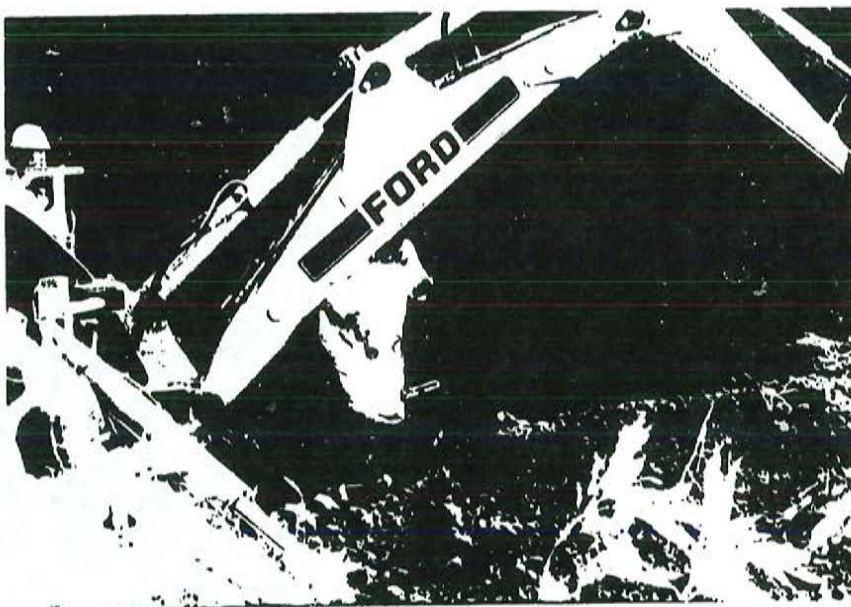
Client: EPA
Camera Make: OLYMPUS OM77AF

E & E Job No.: ZT1071
Serial No. : 1080224

SITE NAME: COTA DRUM SITE
SITE LOCATION: DES MOINES, POLK COUNTY, IOWA
TDD/PAN No.: T07-9105-039/EIA-0160-SBA

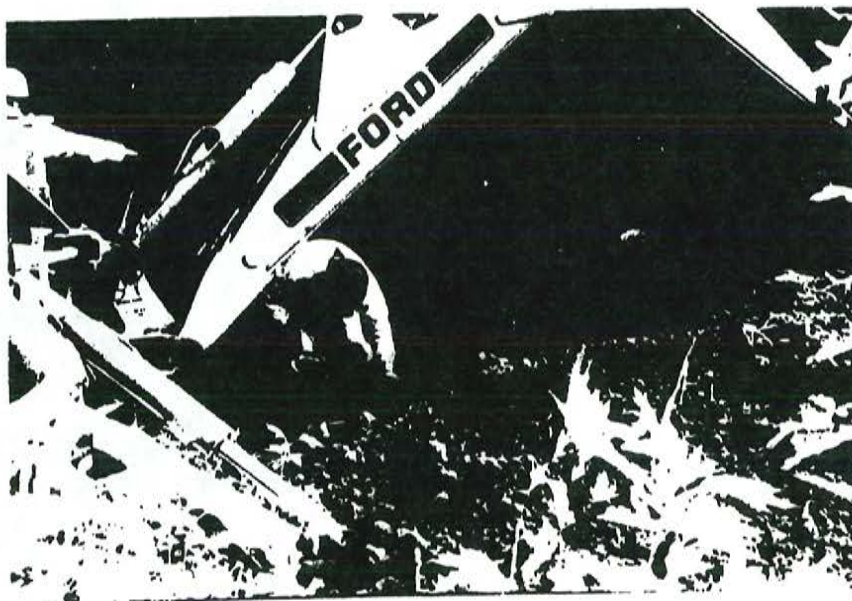
Photographer: MARK ROBERTS
Date/Time : 7-15-91/1030
Lens: Type: 50 MM
Serial No.: 102-8199
Frame No. : 1/3
Direction : NNE
Comments :

WEST END OF TR-1, PARISH
MONITORING WITH HNU



Photographer: MARK ROBERTS
Date/Time : 7-15-91/1030
Lens: Type: 50 MM
Serial No.: 102-8199
Frame No. : 1/4
Direction : N
Comments :

SAMPLE COLLECTION AT WEST END
OF TR-1, SPOILS AND SIDES OF
TRENCH



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Ecology and Environment, Inc.

Photographic Record

=====

Client: EPA

Camera Make: OLYMPUS OM77AF

E & E Job No.: ZT1071

Serial No. : 1080224

SITE NAME: COTA DRUM SITE

SITE LOCATION: DES MOINES, POLK COUNTY, IOWA

TDD/PAN No.: T07-9105-039/EIA-0160-SBA

Photographer: MARK ROBERTS

Date/Time : 7-15-91/1100

Lens: Type: 50 MM

Serial No.: 102-8199

Frame No. : 1/5

Direction : E

Comments :

TR#1 FOLLOWING EXCAVATION AND
REFILLING (EXCEPT SOUTHERN
EXTENSION)



Photographer: MARK ROBERTS

Date/Time : 7-15-91/1100

Lens: Type: 50 MM

Serial No.: 102-8199

Frame No. : 1/6

Direction : E

Comments :

FIBER DRUM FRAGMENTS IN SPOIL
PILE FROM SOUTHERN EXTENSION
OI TR-1



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Ecology and Environment, Inc.

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Photographic Record

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Client: EPA
Camera Make: OLYMPUS OM77AF

E & E Job No.: ZT1071
Serial No. : 1080224

SITE NAME: COTA DRUM SITE
SITE LOCATION: DES MOINES, POLK COUNTY, IOWA
TDD/PAN No.: T07-9105-039/EIA-0160-SBA

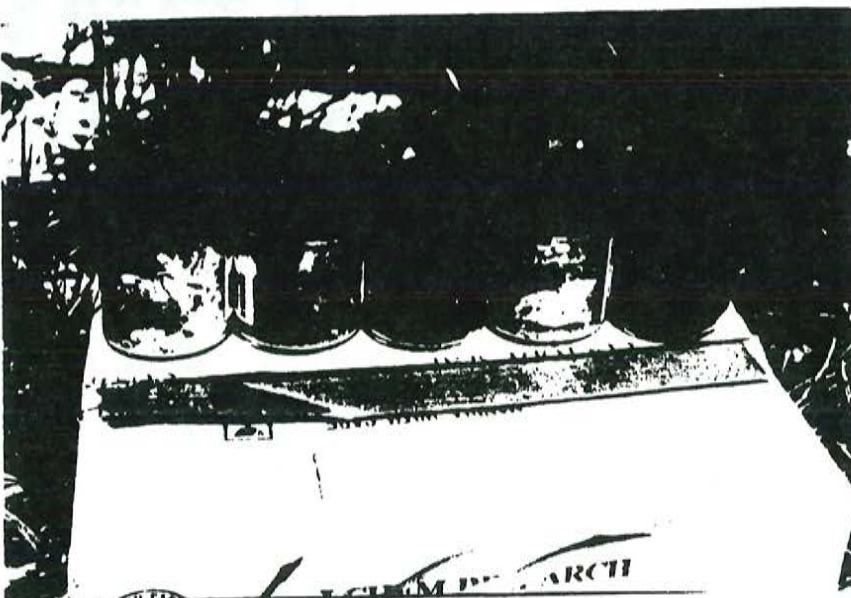
Photographer: MARK ROBERTS
Date/Time : 7-15-91/1105
Lens: Type: 50 MM
Serial No.: 102-8199
Frame No. : 1/7
Direction : N
Comments :

COLLECTION OF CDS-004



Photographer: MARK ROBERTS
Date/Time : 7-15-91/1110
Lens: Type: 50 MM
Serial No.: 102-8199
Frame No. : 1/8
Direction : N
Comments :

SAMPLES 001 THRU 005, LEFT TO
RIGHT



Ecology and Environment, Inc.

Photographic Record

Client: EPA

Camera Make: OLYMPUS OM77AF

E & E Job No.: ZT1071

Serial No. : 1080224

SITE NAME: COTA DRUM SITE

SITE LOCATION: DES MOINES, POLK COUNTY, IOWA

TDD/PAN No.: T07-9105-039/EIA-O160-SBA

Photographer: MARK ROBERTS

Date/Time : 7-15-91/1344

Lens: Type: 50 MM

Serial No.: 102-8199

Frame No. : 1/9

Direction : NNW

Comments :

BACKHOE DECON FOLLOWING
COMPLETION OF TR-1



Photographer: MARK ROBERTS

Date/Time : 7-15-91/1350

Lens: Type: 50 MM

Serial No.: 102-8199

Frame No. : 1/10

Direction : NNE

Comments :

TOPSOIL CAPPING AND GRADING
FOLLOWING COMPLETION OF TR-1



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Ecology and Environment, Inc.

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Photographic Record

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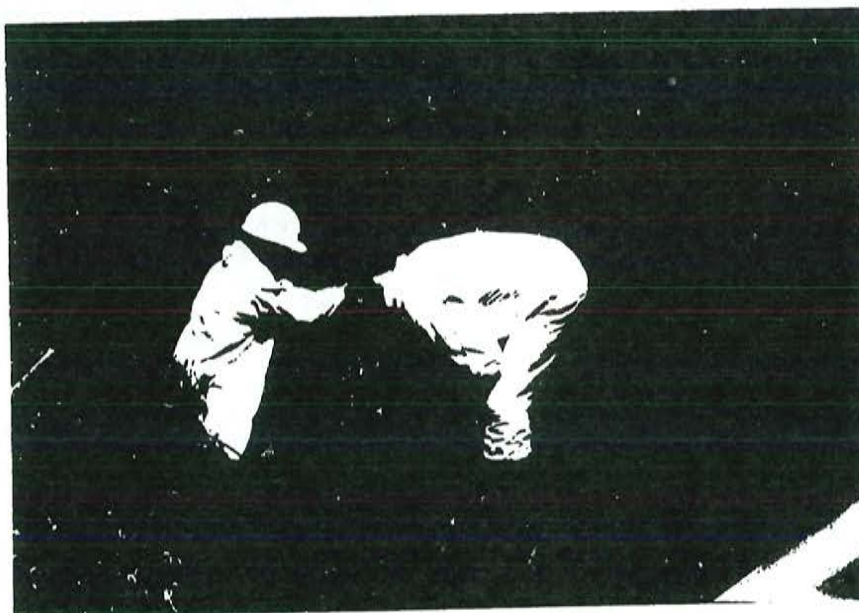
Client: EPA
Camera Make: OLYMPUS OM77AF

E & E Job No.: ZT1071
Serial No. : 1080224

SITE NAME: COTA DRUM SITE
SITE LOCATION: DES MOINES, POLK COUNTY, IOWA
TDD/PAN No.: T07-9105-039/EIA-O160-SBA

Photographer: MARK ROBERTS
Date/Time : 7-15-91/1400
Lens: Type: 50 MM
Serial No.: 102-8199
Frame No. : 1/11
Direction : NNE
Comments :

DRUM AT NORTH END OF TR-2



Photographer: MARK ROBERTS
Date/Time : 7-15-91/12
Lens: Type: 50 MM
Serial No.: 102-8199
Frame No. : 1/12
Direction : NNE
Comments :

DRUM AT NORTH END OF TR-2



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Ecology and Environment, Inc.

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Photographic Record

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Client: EPA

Camera Make: OLYMPUS OM77AF

E & E Job No.: ZT1071

Serial No. : 1080224

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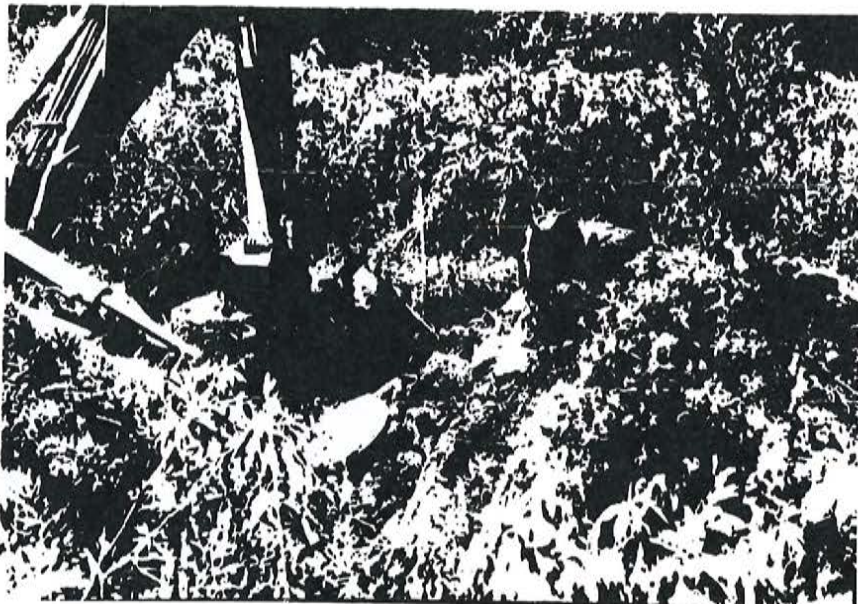
SITE NAME: COTA DRUM SITE

SITE LOCATION: DES MOINES, POLK COUNTY, IOWA

TDD/PAN No.: T07-9105-039/EIA-0160-SBA

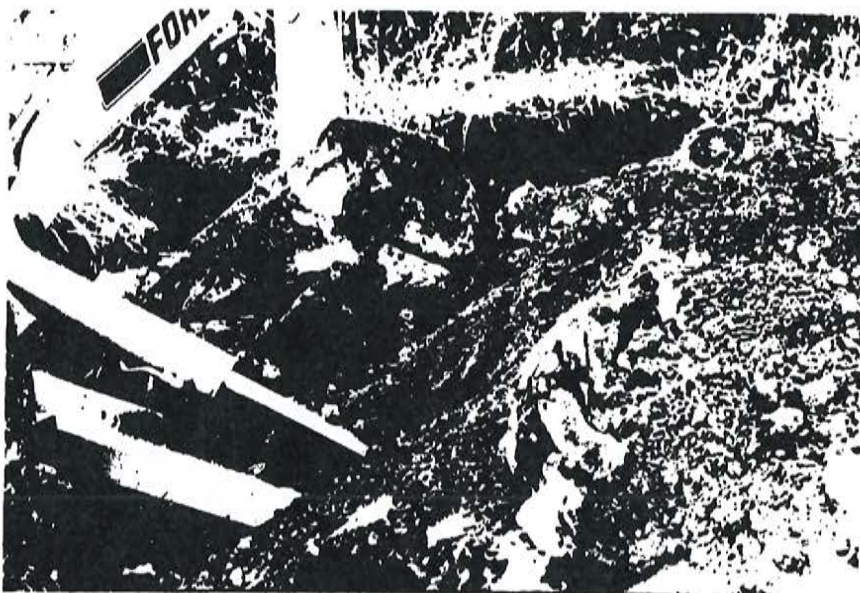
Photographer: MARK ROBERTS
Date/Time : 7-15-91/1435
Lens: Type: 50 MM
Serial No.: 102-8199
Frame No. : 1/13
Direction : NW
Comments :

DRUM FRAGMENTS IN SPOILS,
NORTH END OF TR-2



Photographer: MARK ROBERTS
Date/Time : 7-15-91/1455
Lens: Type: 50 MM
Serial No.: 102-8199
Frame No. : 1/14
Direction : E
Comments :

DRUM FRAGMENT WITH VISCOUS
FLUID DRIPPING FROM TORN
EDGE (SAMPLE CDS-006)



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Ecology and Environment, Inc.

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Photographic Record

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Client: EPA

Camera Make: OLYMPUS OM77AF

E & E Job No.: ZT1071

Serial No. : 1080224

SITE NAME: COTA DRUM SITE

SITE LOCATION: DES MOINES, POLK COUNTY, IOWA

TDD/PAN No.: T07-9105-039/EIA-0160-SBA

Photographer: MARK ROBERTS

Date/Time : 7-15-91/1520

Lens: Type: 50 MM

Serial No.: 102-8199

Frame No. : 1/15

Direction : DOWN

Comments :

5 GALLON BUCKET WITH SLUDGE,
HNU 15 PPM > BACKGROUND.



Photographer: MARK ROBERTS

Date/Time : 7-15-91/1530

Lens: Type: 50 MM

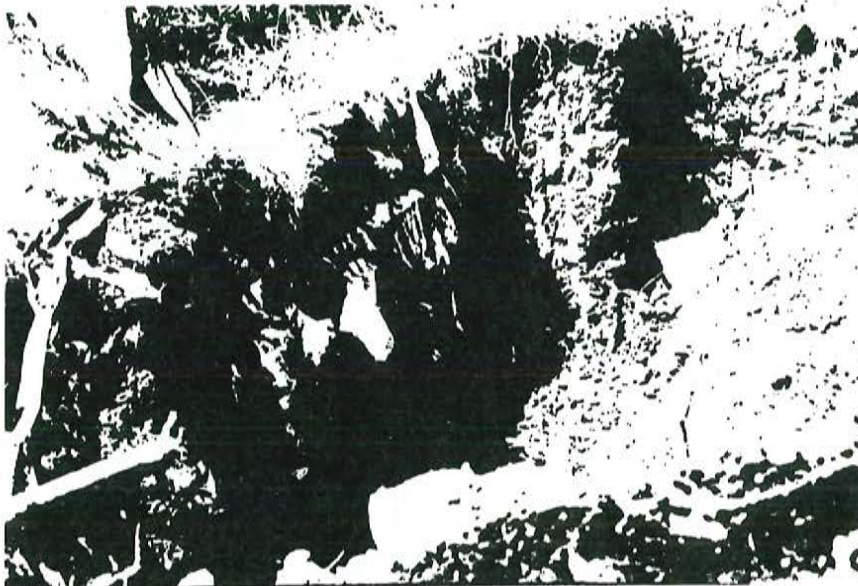
Serial No.: 102-8199

Frame No. : 1/18

Direction : N

Comments :

NORTH END OF TR-2



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Ecology and Environment, Inc.

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Photographic Record

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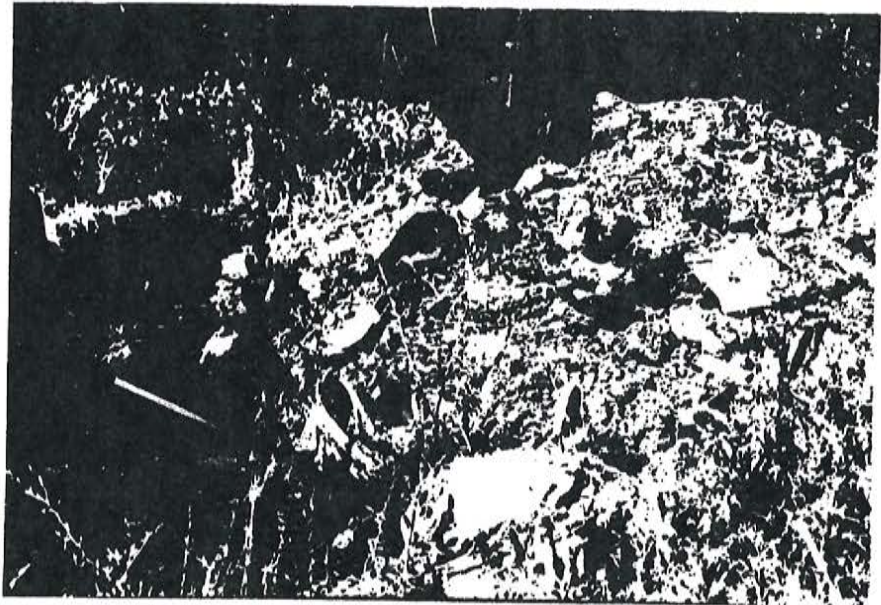
Client: EPA
Camera Make: OLYMPUS OM77AF

E & E Job No.: ZT1071
Serial No. : 1080224

SITE NAME: COTA DRUM SITE
SITE LOCATION: DES MOINES, POLK COUNTY, IOWA
TDD/PAN No.: T07-9105-039/EIA-0160-SBA

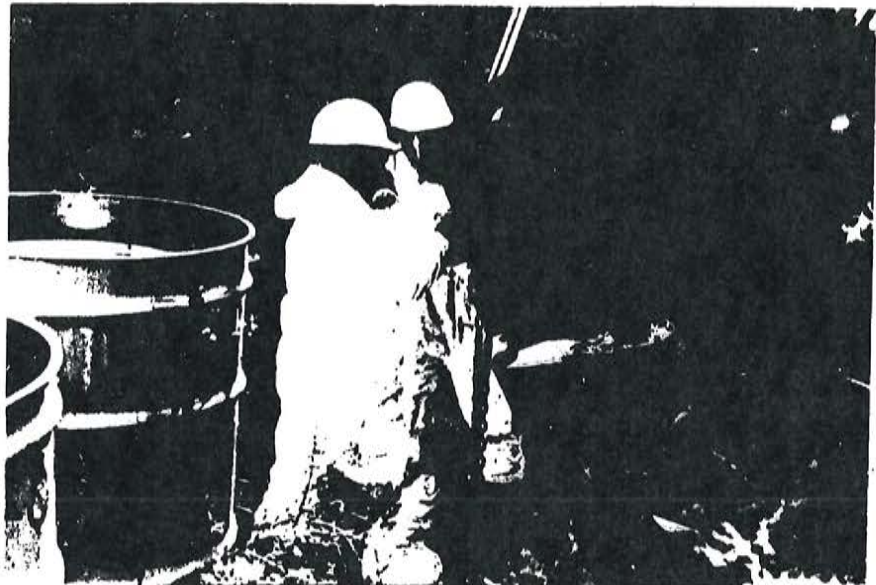
Photographer: MARK ROBERTS
Date/Time : 7-15-91/1600
Lens: Type: 50 MM
Serial No.: 102-8199
Frame No. : 1/17
Direction : N
Comments :

SPOILS PILE, TR-2



Photographer: MARK ROBERTS
Date/Time : 7-16-91/0900
Lens: Type: 50 MM
Serial No.: 102-8199
Frame No. : 1/18
Direction : E
Comments :

INTACT DRUM TAKEN FROM TR-2



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Ecology and Environment, Inc.

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Photographic Record

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Client: EPA

Camera Make: OLYMPUS OM77AF

E & E Job No.: ZT1071

Serial No. : 1080224

SITE NAME: COTA DRUM SITE

SITE LOCATION: DES MOINES, POLK COUNTY, IOWA

TDD/PAN No.: T07-9105-039/EIA-0160-SBA

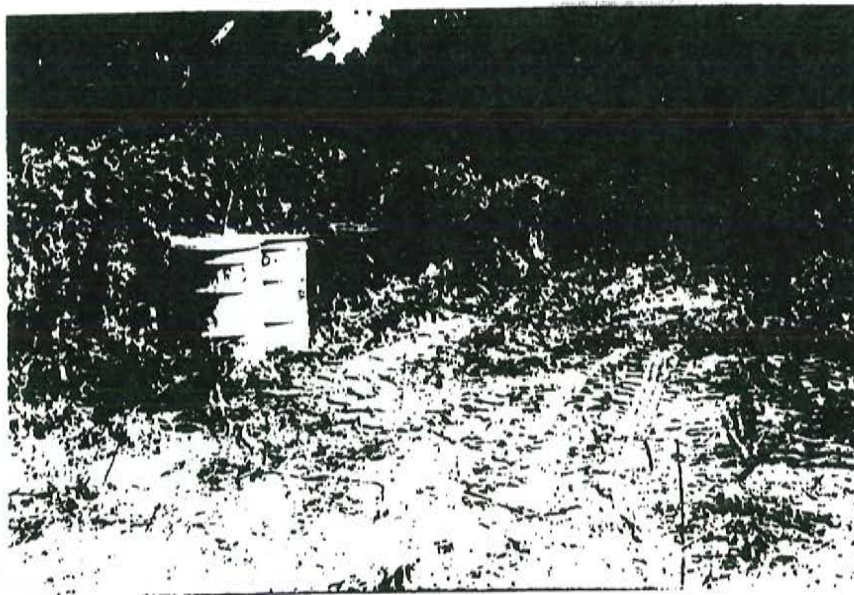
Photographer: MARK ROBERTS
Date/Time : 7-16-91/0905
Lens: Type: 50 MM
Serial No.: 102-8199
Frame No. : 1/19
Direction : E
Comments :

OVERPACKING OPERATION



Photographer: MARK ROBERTS
Date/Time : 7-16-91/1030
Lens: Type: 50 MM
Serial No.: 102-8199
Frame No. : 1/20
Direction : N
Comments :

STAGED DRUMS AND OVERPACKS OF
MATERIALS FROM TR-2 AFTER
BACKFILLING



Ecology and Environment, Inc.

Photographic Record

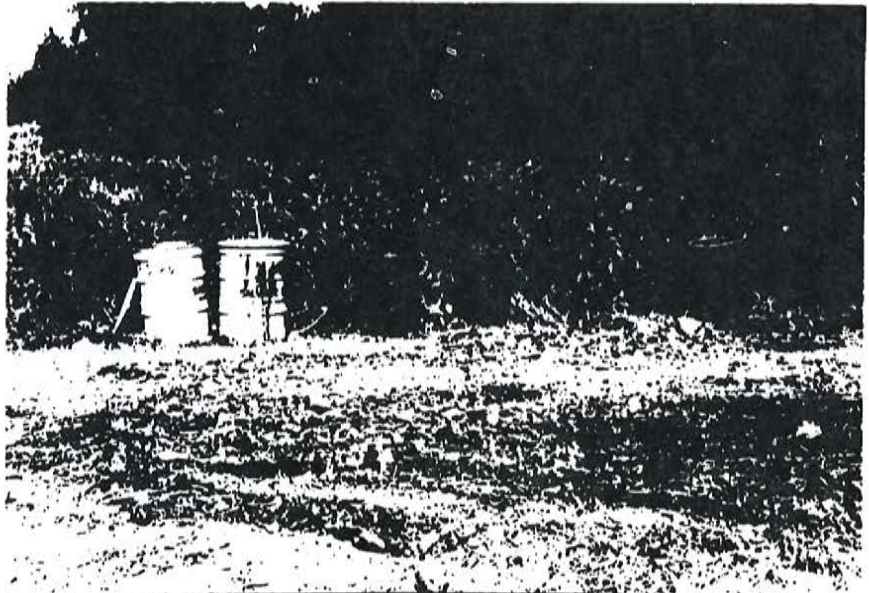
Client: EPA
Camera Make: OLYMPUS OM77AF

E & E Job No.: ZT1071
Serial No. : 1080224

SITE NAME: COTA DRUM SITE
SITE LOCATION: DES MOINES, POLK COUNTY, IOWA
TDD/PAN No.: T07-9105-039/EIA-O160-SBA

Photographer: MARK ROBERTS
Date/Time : 7-16-91/1030
Lens: Type: 50 MM
Serial No.: 102-8199
Frame No. : 1/21
Direction : SW
Comments :

DRUM FROM TR-2



Photographer: JOE PARISH
Date/Time : 7-16-91/1110
Lens: Type: 50 MM
Serial No.: 102-8199
Frame No. : 1/22
Direction : W
Comments :

LEVEL B DRUM SAMPLING, TR-2



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Ecology and Environment, Inc.

Photographic Record

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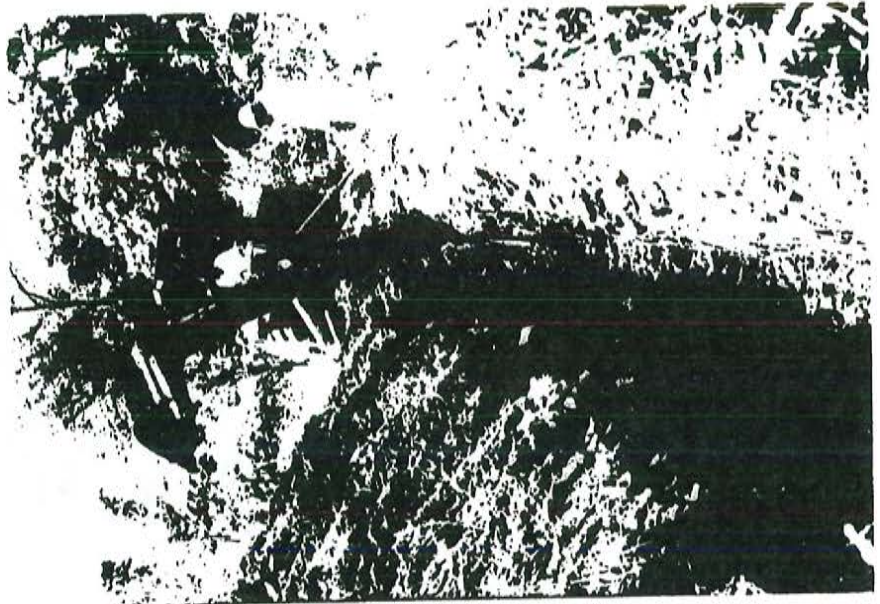
Client: EPA
Camera Make: OLYMPUS OM77AF

E & E Job No.: ZT1071
Serial No. : 1080224

SITE NAME: COTA DRUM SITE
SITE LOCATION: DES MOINES, POLK COUNTY, IOWA
TDD/PAN No.: T07-9105-039/EIA-0160-SBA

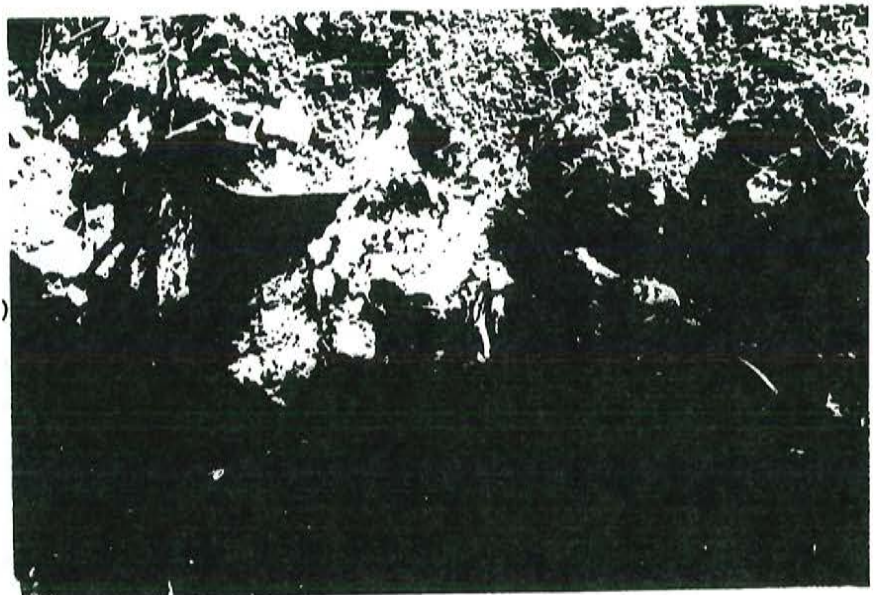
Photographer: JOE PARISH
Date/Time : 7-16-91/1520
Lens: Type: 50 MM
Serial No.: 102-8199
Frame No. : 1/23
Direction : W
Comments :

EXCAVATION OF TR-3, EAST-WEST
LEG



Photographer: JOE PARISH
Date/Time : 7-16-91/1525
Lens: Type: 50 MM
Serial No.: 102-8199
Frame No. : 1/24
Direction : S
Comments :

MID-TRENCH, SOUTHSIDE TR-3 (E-W)



Ecology and Environment, Inc.

Photographic Record

Client: EPA

Camera Make: OLYMPUS OM77AF

E & E Job No.: ZT1071

Serial No. : 1080224

SITE NAME: COTA DRUM SITE

SITE LOCATION: DES MOINES, POLK COUNTY, IOWA

TDD/PAN No.: T07-9105-039/EIA-O160-SBA

Photographer: JOE PARISH
Date/Time : 7-16-91/1530
Lens: Type: 50 MM
Serial No.: 102-8199
Frame No. : 1/25
Direction : N
Comments :

NORTH END OF TRENCH, TR-3 (E-W)



Photographer: JOE PARISH
Date/Time : 7-17-91/0805
Lens: Type: 50 MM
Serial No.: 102-8199
Frame No. : 1/26
Direction : E
Comments :

BACKFILLING TR-3 (E-W)



Ecology and Environment, Inc.

Photographic Record

Client: EPA
Camera Make: OLYMPUS OM77AF

E & E Job No.: ZT1071
Serial No. : 1080224

SITE NAME: COTA DRUM SITE
SITE LOCATION: DES MOINES, POLK COUNTY, IOWA
TDD/PAN No.: T07-9105-039/EIA-0160-SBA

Photographer: JOE PARISH
Date/Time : 7-17-91/0900
Lens: Type: 50 MM
Serial No.: 102-8199
Frame No. : 1/27
Direction : S
Comments :

EXCAVATING TR-3, NORTH-SOUTH
LEG, AT NORTH END



Photographer: JOE PARISH
Date/Time : 7-17-91/0900
Lens: Type: 50 MM
Serial No.: 102-8199
Frame No. : 1/28
Direction : S
Comments :

DRUM FOUND IN TR-3 (N-S)



Ecology and Environment, Inc.

Photographic Record

Client: EPA
Camera Make: OLYMPUS OM77AF

E & E Job No.: ZT1071
Serial No.: 1080224

SITE NAME: COTA DRUM SITE
SITE LOCATION: DES MOINES, POLK COUNTY, IOWA
TDD/PAN No.: T07-9105-039/EIA-0160-SBA

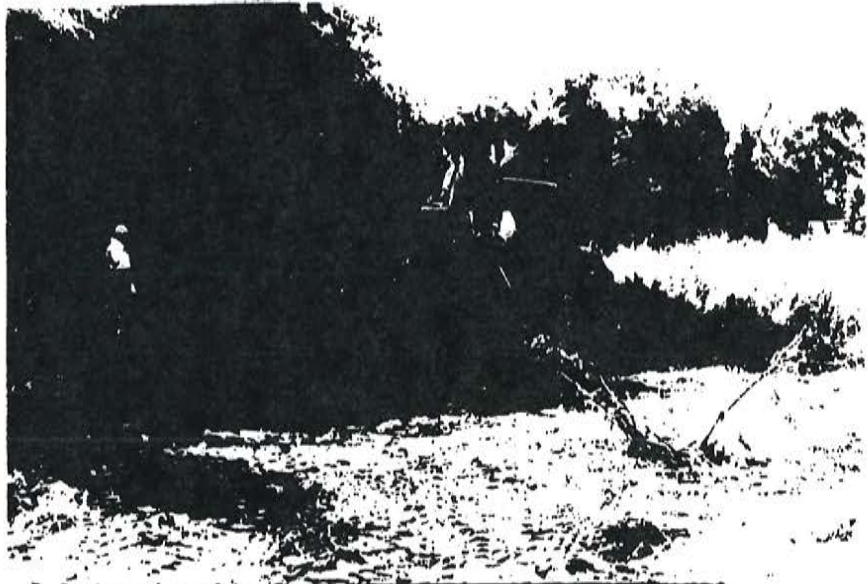
Photographer: JOE PARISH
Date/Time : 7-17-91/0915
Lens: Type: 50 MM
Serial No.: 102-8199
Frame No. : 1/29
Direction : S
Comments :

TRENCH TR-3 (N-S)



Photographer: JOE PARISH
Date/Time : 7-17-91/0915
Lens: Type: 50 MM
Serial No.: 102-8199
Frame No. : 1/30
Direction : SE
Comments :

EXCAVATING TR-3 (N-S)



Ecology and Environment, Inc.

Photographic Record

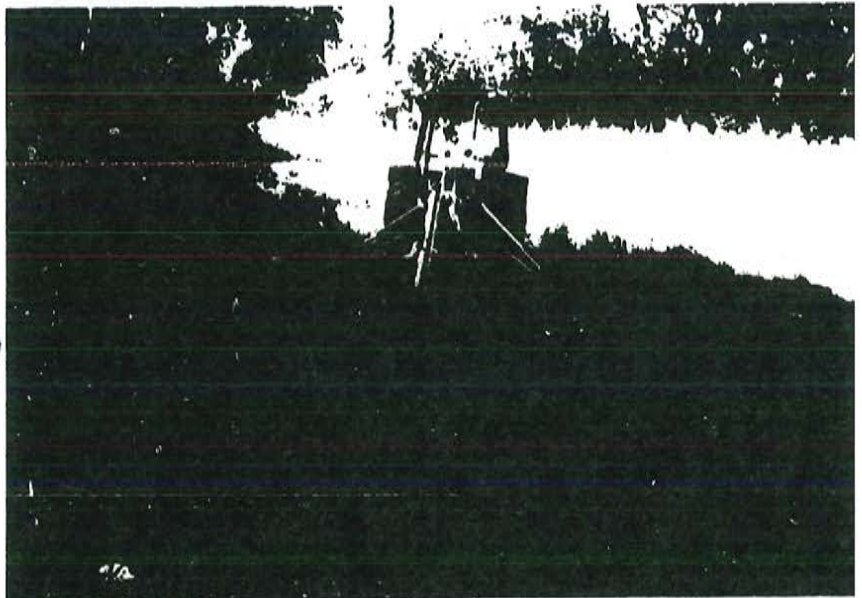
Client: EPA
Camera Make: OLYMPUS OM77AF

E & E Job No.: ZT1071
Serial No. : 1080224

SITE NAME: COTA DRUM SITE
SITE LOCATION: DES MOINES, POLK COUNTY, IOWA
TDD/PAN No.: T07-9105-039/EIA-O160-SBA

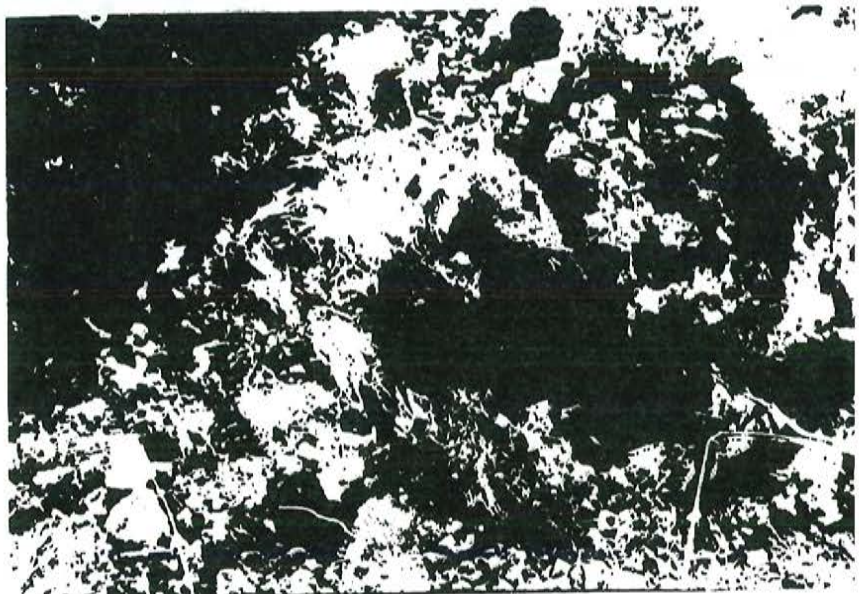
Photographer: JOE PARISH
Date/Time : 7-17-91/0930
Lens: Type: 50 MM
Serial No.: 102-8199
Frame No. : 1/31
Direction : S
Comments :

SOUTH END EXCAVATION OF TR-3 (N-S)



Photographer: JOE PARISH
Date/Time : 7-17-91/1130
Lens: Type: 50 MM
Serial No.: 102-8199
Frame No. : 1/32
Direction : DOWN
Comments :

ASBESTOS FIBERS, NORTH END
OF TRENCH TR-4



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Ecology and Environment, Inc.

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Photographic Record

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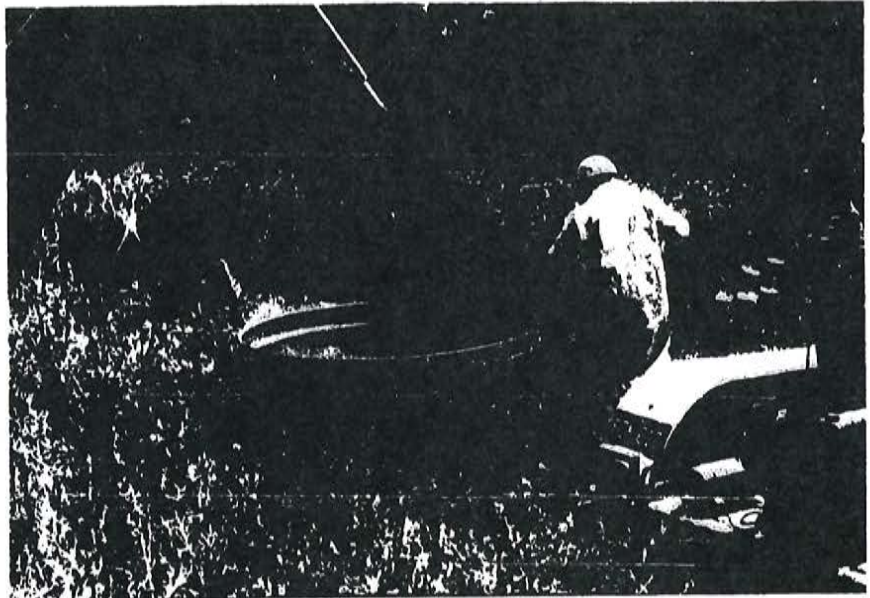
Client: EPA
Camera Make: OLYMPUS OM77AF

E & E Job No.: ZT1071
Serial No. : 1080224

SITE NAME: COTA DRUM SITE
SITE LOCATION: DES MOINES, POLK COUNTY, IOWA
TDD/PAN No.: T07-9105-039/EIA-0160-SBA

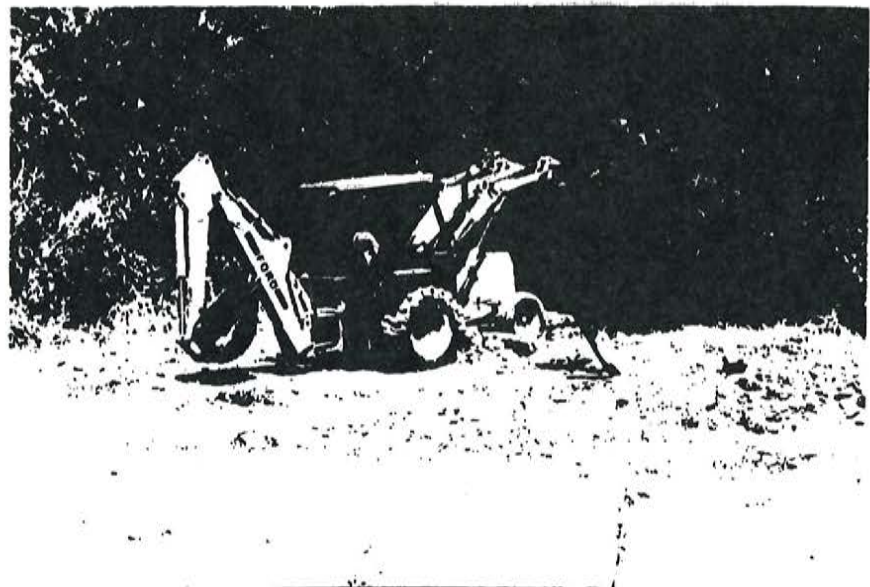
Photographer: JOE PARISH
Date/Time : 7-17-91/1310
Lens: Type: 50 MM
Serial No.: 102-8199
Frame No. : 1/33
Direction : S
Comments :

STEAM DECON OPERATION



Photographer: JOE PARISH
Date/Time : 7-17-91/1330
Lens: Type: 50 MM
Serial No.: 102-8199
Frame No. : 1/34
Direction : E
Comments :

CAPPING TR-3 (N-S)



Ecology and Environment, Inc.

Photographic Record

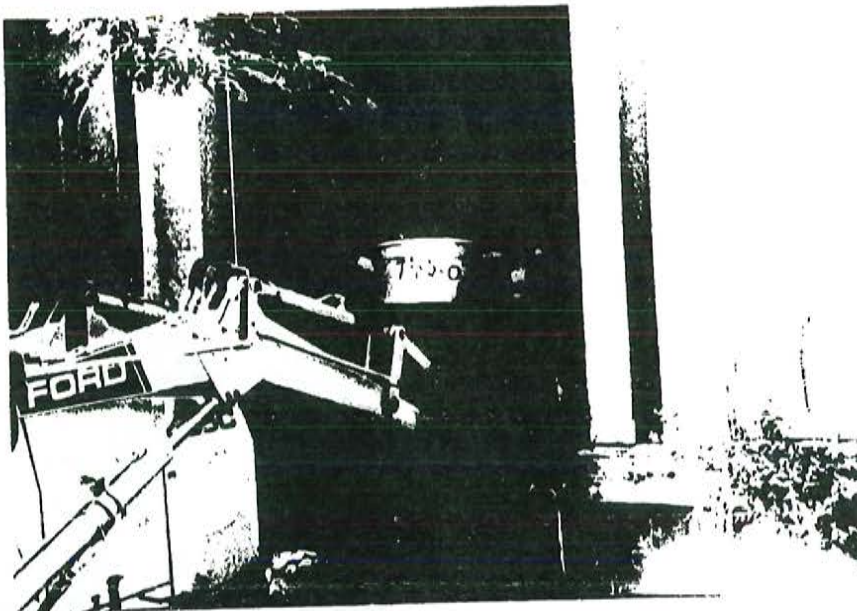
Client: EPA
Camera Make: OLYMPUS OM77AF

E & E Job No.: ZT1071
Serial No. : 1080224

SITE NAME: COTA DRUM SITE
SITE LOCATION: DES MOINES, POLK COUNTY, IOWA
TDD/PAN No.: T07-9105-039/EIA-0160-SBA

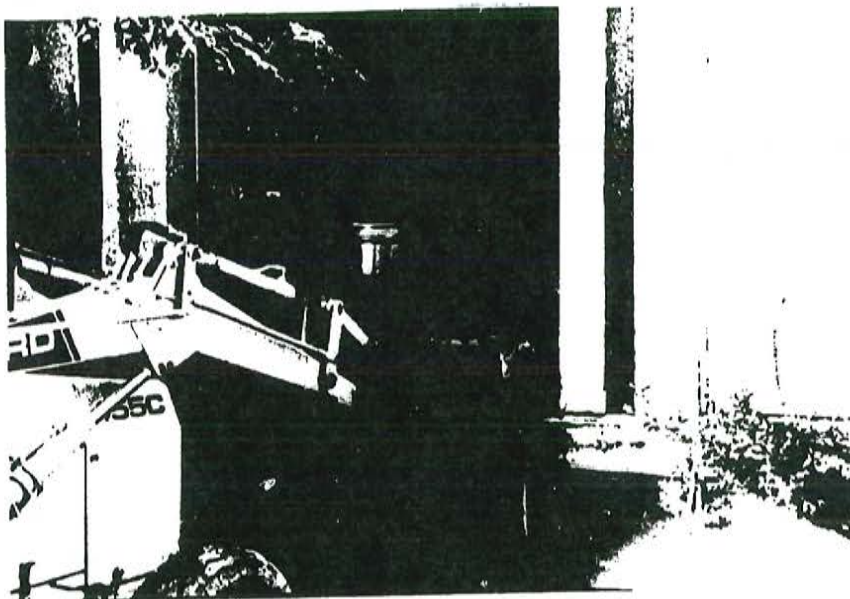
Photographer: DAVE KINROTH
Date/Time : 7-17-91/1445
Lens: Type: 50 MM
Serial No.: 102-8199
Frame No. : 1/35
Direction : W
Comments :

EVANS ENGINEERING LOADING
DRUMS IN BUILDING



Photographer: DAVE KINROTH
Date/Time : 7-17-91/1445
Lens: Type: 50 MM
Serial No.: 102-8199
Frame No. : 1/36
Direction : W
Comments :

EVANS LOADING DRUMS IN BUILDING



Ecology and Environment, Inc.

Photographic Record

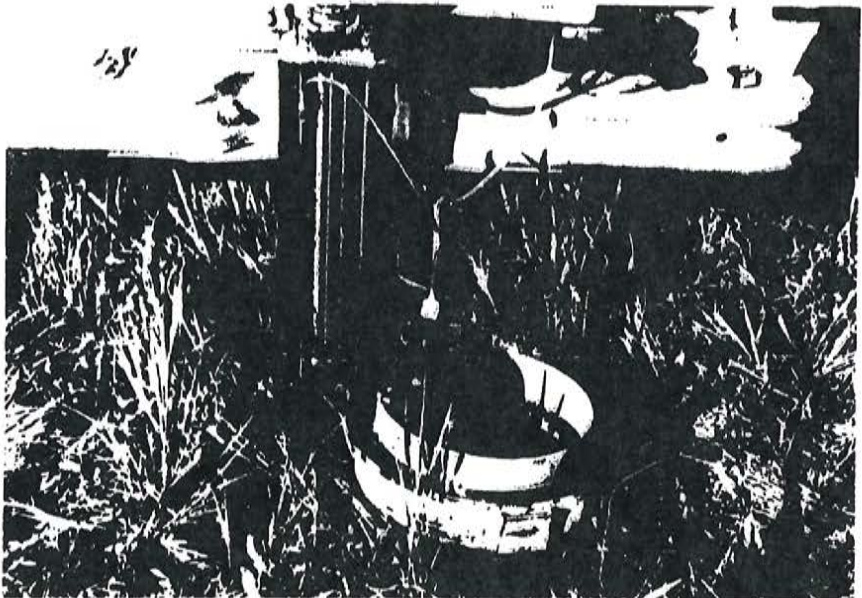
Client: EPA
Camera Make: OLYMPUS OM77AF

E & E Job No.: ZT1071
Serial No. : 1080224

SITE NAME: COTA DRUM SITE
SITE LOCATION: DES MOINES, POLK COUNTY, IOWA
TDD/PAN No.: T07-9105-039/EIA-O160-SBA

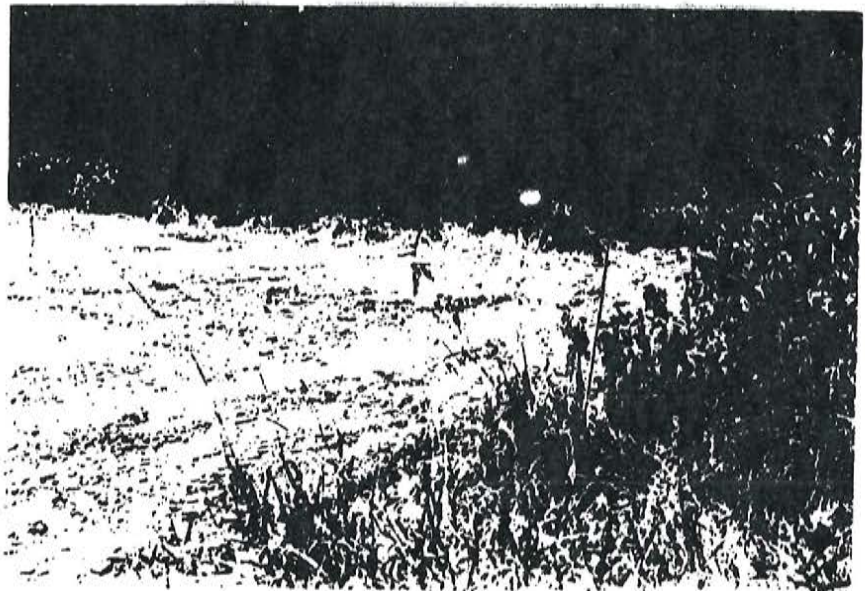
Photographer: JOE PARISH
Date/Time : 7-18-91/0810
Lens: Type: 50 MM
Serial No.: 102-8199
Frame No. : 2/1
Direction : S
Comments :

GEOPROBE OPERATION



Photographer: JOE PARISH
Date/Time : 7-18-91/1430
Lens: Type: 50 MM
Serial No.: 102-8199
Frame No. : 2/2
Direction : E
Comments :

TR-3 LOCATION, CAPPED



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Ecology and Environment, Inc.

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Photographic Record

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Client: EPA

Camera Make: OLYMPUS OM77AF

E & E Job No.: ZT1071

Serial No. : 1080224

SITE NAME: COTA DRUM SITE

SITE LOCATION: DES MOINES, POLK COUNTY, IOWA

TDD/PAN No.: T07-9105-039/EIA-O160-SBA

Photographer: JOE PARISH
Date/Time : 7-18-91/1430
Lens: Type: 50 MM
Serial No.: 102-8199
Frame No. : 2/3
Direction : W
Comments :

TR-1, TR-2 LOCATION, CAPPED
WITH TOPSOIL



Photographer: JOE PARISH
Date/Time : 7-18-91
Lens: Type: 50 MM
Serial No.: 102-8199
Frame No. : 2/4
Direction : W
Comments :

TR-4 LOCATION, FRONT, RIGHT.
SCHOOL IN BACKGROUND ADJACENT
TO WESTERN SECTION OF PROPERTY



=====
Ecology and Environment, Inc.

Photographic Record
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Client: EPA
Camera Make: OLYMPUS OM77AF

E & E Job No.: ZT1071
Serial No. : 1080224

SITE NAME: COTA DRUM SITE
SITE LOCATION: DES MOINES, POLK COUNTY, IOWA
TDD/PAN No.: T07-9105-039/EIA-0160-SBA

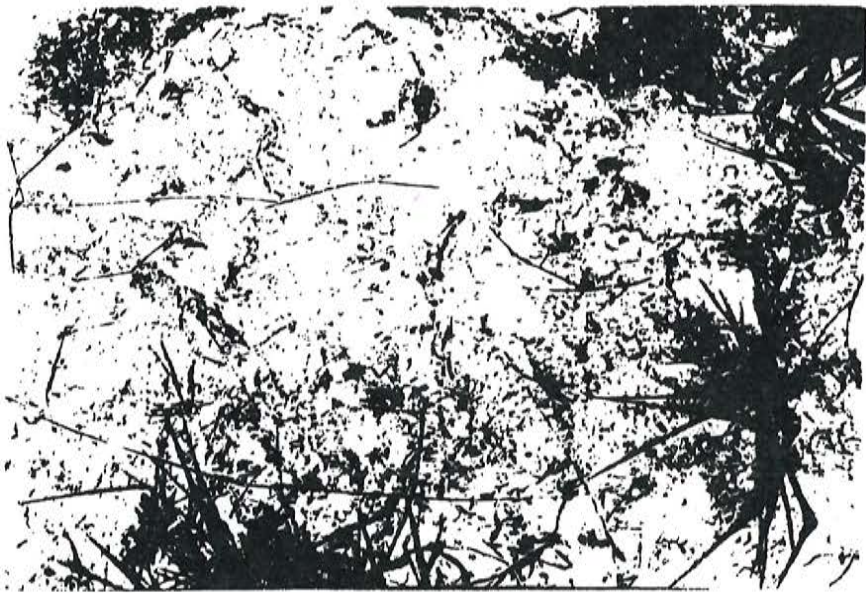
Photographer: JOE PARISH
Date/Time : 7-18-91/1430
Lens: Type: 50 MM
Serial No.: 102-8199
Frame No. : 2/5
Direction : W
Comments :

SPILL AREA SOUTH OF BUILDING



Photographer: JOE PARISH
Date/Time : 7-18-91/1430
Lens: Type: 50 MM
Serial No.: 102-8199
Frame No. : 2/6
Direction : DOWN
Comments :

SPILL AREA SHOWING PAINT
RUNOFF



=====

Ecology and Environment, Inc.

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Photographic Record

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Client: EPA

Camera Make: OLYMPUS OM77AF

E & E Job No.: ZT1071

Serial No. : 1080224

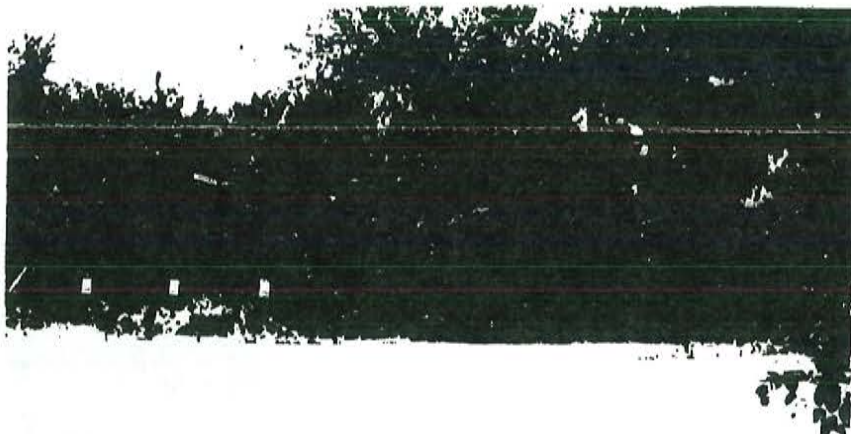
SITE NAME: COTA DRUM SITE

SITE LOCATION: DES MOINES, POLK COUNTY, IOWA

TDD/PAN No.: T07-9105-039/EIA-0160-SBA

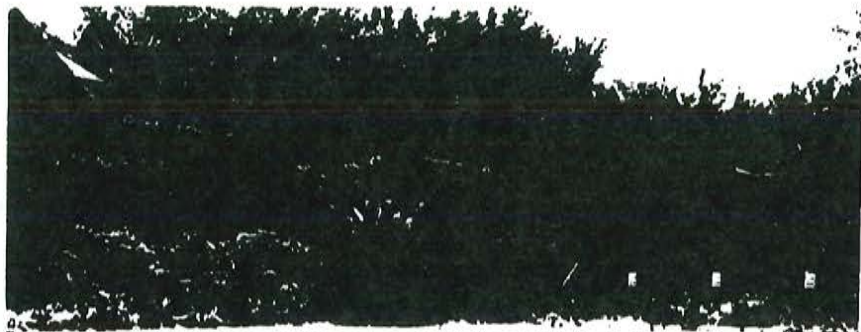
Photographer: JOE PARISH
Date/Time : 7-18-91/1430
Lens: Type: 50 MM
Serial No.: 102-8199
Frame No. : 2/7
Direction : W
Comments :

COTA FACILITY. WAREHOUSE/STORAGE
AREA RIGHT, CENTER SHOWING NEW
SECURITY DOOR.



Photographer: JOE PARISH
Date/Time : 7-18-91/1430
Lens: Type: 50 MM
Serial No.: 102-8199
Frame No. : 2/8
Direction : W
Comments :

COTA FACILITY, MANUFACTURING
AND WAREHOUSE



=====

Ecology and Environment, Inc.

Photographic Record

=====

Client: EPA

Camera Make: OLYMPUS OM77AF

E & E Job No.: ZT1071

Serial No. : 1080224

SITE NAME: COTA DRUM SITE

SITE LOCATION: DES MOINES, POLK COUNTY, IOWA

TDD/PAN No.: T07-9105-039/EIA-0160-SBA

Photographer: JOE PARISH
Date/Time : 7-18-91/1430
Lens: Type: 50 MM
Serial No.: 102-8199
Frame No. : 2/9
Direction : SW
Comments :

COTA FACILITY SHOWING CONVERTED
HOUSE/OFFICE



Photographer: JOE PARISH
Date/Time : 7-18-91/1430
Lens: Type: 50 MM
Serial No.: 102-8199
Frame No. : 2/10
Direction : S
Comments :

COTA ENTRANCE OFF SE 14TH STREET



=====

Ecology and Environment, Inc.

Photographic Record

=====

Client: EPA

E & E Job No.: ZT1071

Camera Make: OLYMPUS OM77AF

Serial No. : 1080224

SITE NAME: COTA DRUM SITE

SITE LOCATION: DES MOINES, POLK COUNTY, IOWA

TDD/PAN No.: T07-9105-039/EIA-0160-SBA

Photographer: JOE PARISH
Date/Time : 7-18-91/1430
Lens: Type: 50 MM
Serial No.: 102-8199
Frame No. : 2/11
Direction : W
Comments :

ENTRANCE GATE, SECURITY FENCE
OFF SE 14TH STREET

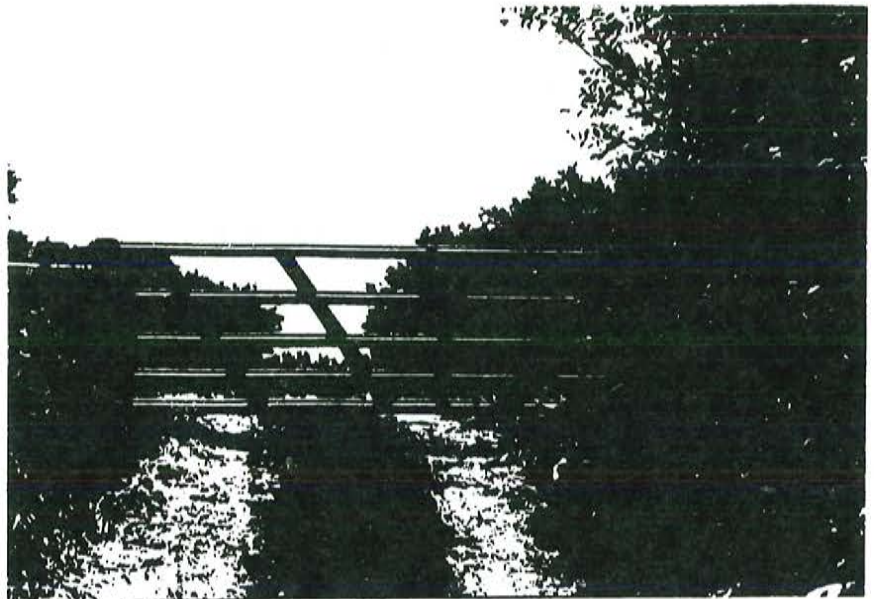


EXHIBIT E

Historical Environmental Timeline

Former COTA Industries Property

Rezoning Application ZONG-2026-000013

This timeline summarizes publicly available environmental records associated with the former COTA Industries property. It is provided to assist the **Planning and Zoning Commission**, the **City Council**, and the public in understanding the documented environmental history of the property that is the subject of **Rezoning Application ZONG-2026-000013**.

Year	Documented Event	Source
1950s (Approx.)	COTA Industries began operating a paint manufacturing facility on the property. Historical operations included paint manufacturing, industrial solvent use, waste handling, and drum disposal associated with manufacturing operations.	Ecology & Environment Memorandum; IDNR USER Site Report
1950s – Early 1980s (Approx. 30 Years)	Historical records indicate industrial waste disposal activities occurred on the property for approximately three decades. Reported activities included disposal of paint wastes, industrial solvents, manufacturing by-products, and drums associated with plant operations.	Ecology & Environment Memorandum; IDNR Investigation Records
1991	The Iowa Department of Natural Resources (IDNR), working with the U.S. Environmental Protection Agency (EPA), initiated an environmental investigation into hazardous waste disposal at the former COTA Industries property. Soil and waste samples were collected for laboratory analysis, and additional groundwater investigation was recommended.	IDNR / EPA Investigation Documents
1991	EPA Technical Assistance Team conducted exploratory trenching, geophysical surveys, and environmental sampling to determine whether buried hazardous waste was present and whether hazardous substances had been released into the environment.	Ecology & Environment Memorandum
1991–1992	Laboratory analyses documented contamination associated with historical industrial activities. Investigations evaluated heavy metals, paint wastes, solvents, volatile organic compounds, and other industrial contaminants identified in soils and waste materials.	IDNR / EPA Investigation Documents
1992	IDNR completed follow-up investigative reports and quality-control reviews documenting the environmental investigation, laboratory findings, and recommendations for additional investigation and remediation, including groundwater sampling and removal of buried drums and wastes.	IDNR Follow-up Investigation Report
Post-Investigation	Historical cleanup activities included removal of contaminated surface soils associated with a paint spill. However, the IDNR USER Site Information Report notes that historical drum disposal areas remained in place following those cleanup activities.	IDNR USER Site Report
2009	IDNR issued the USER Site Information Report summarizing the property's environmental history. The report states: " However, there has been no groundwater assessment and it is possible there may be	IDNR USER Site Report (CON 12-15, Doc. #20342)

Year	Documented Event	Source
2026	significant subsurface contamination with paint solvents. Drum disposal areas remain in place." The report also identifies areas potentially impacted by the site. Rezoning Application ZONG-2026-000013 requests a Comprehensive Plan amendment and rezoning of approximately 12.36 acres for high-density residential development, including a proposed 110-unit age-restricted apartment building and areas designated for Potential Future Residential Development and Potential Future Retail. Based on the public record available to neighboring property owners, no environmental investigations completed after the 2009 IDNR USER Site Information Report have been identified for inclusion in the public rezoning record.	Rezoning Application / Public Record

Key Observation

The publicly available record documents approximately **30 years of industrial manufacturing and waste disposal activities**, followed by extensive investigations conducted by the Iowa Department of Natural Resources (IDNR) and the U.S. Environmental Protection Agency (EPA) beginning in 1991. Those investigations documented hazardous waste disposal, buried drums, contaminated soils, hazardous substances, and evidence of releases associated with historical industrial operations.

The IDNR's 2009 **USER Site Information Report** further states that **no groundwater assessment had been completed**, that **significant subsurface contamination with paint solvents may still be possible**, that **drum disposal areas remain in place**, and identifies **areas potentially impacted by the site**.

These historical records do **not** necessarily represent current environmental conditions, nor do they establish that the property cannot be safely redeveloped. Rather, they demonstrate why current environmental information is important before permanently amending the Comprehensive Plan and approving a rezoning that would allow long-term residential development.

Accordingly, the Jordan Task Force Group respectfully requests that any **Phase I Environmental Site Assessment, Phase II Environmental Site Assessment, groundwater investigation, vapor intrusion study, Brownfield assessment, remediation report, regulatory closure document, engineering control, institutional control, environmental covenant**, or any other environmental investigation completed since issuance of the 2009 IDNR USER Site Information Report be included in the public record before final legislative action is taken on Rezoning Application **ZONG-2026-000013**.

Primary Sources

- **Exhibit A** – Iowa Department of Natural Resources **USER Site Information Report** (CON 12-15, Doc. #20342).
- **Exhibit B** – Iowa Department of Natural Resources / U.S. Environmental Protection Agency **Investigation File** (1991–1992).
- **Exhibit C** – Iowa Department of Natural Resources **Follow-up Investigation Report** (1992).

- **Exhibit D** – Ecology & Environment Memorandum, Historical Site Maps, Investigation Photographs, and Supporting Documentation.

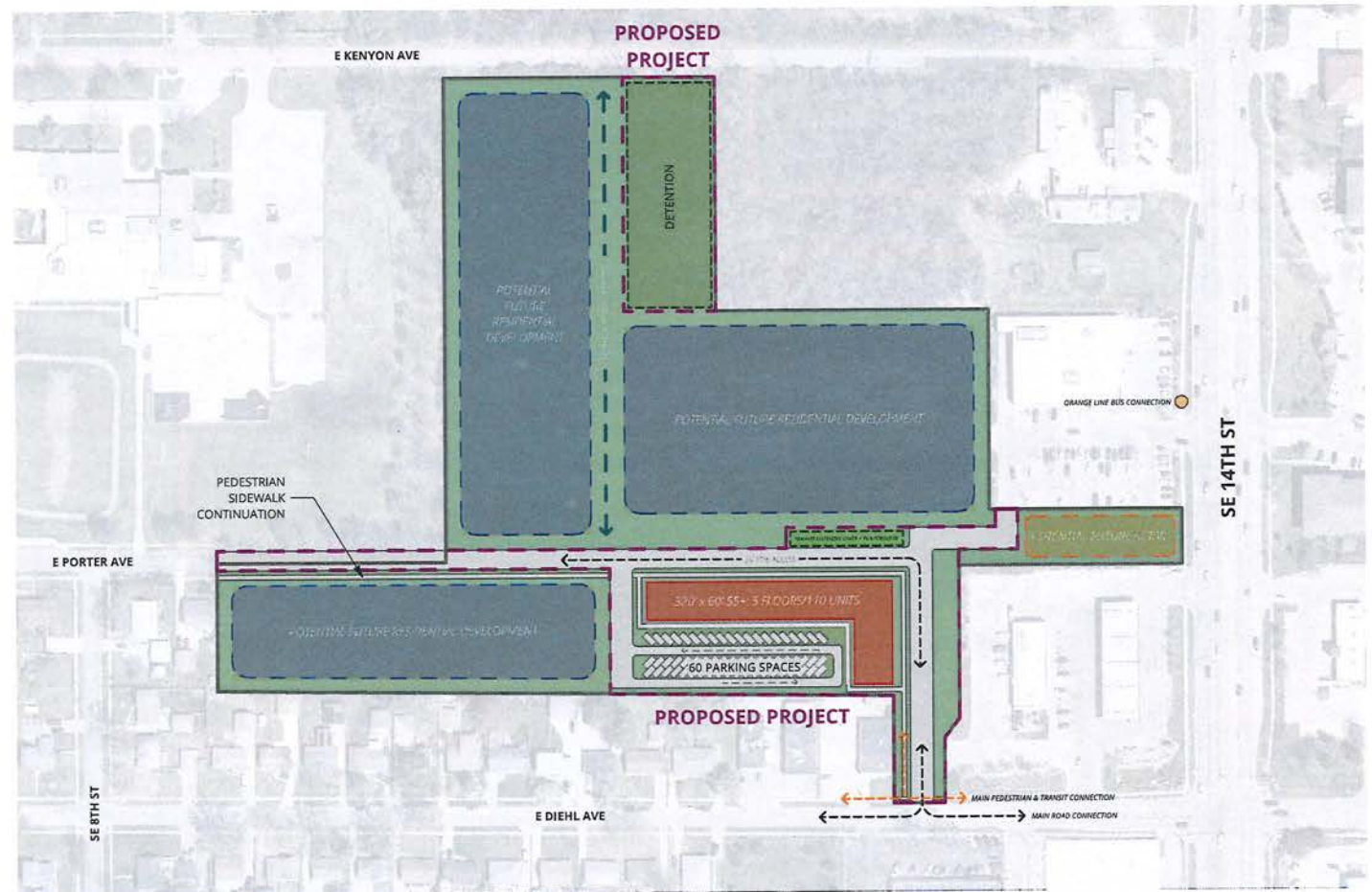
Prepared by the Jordan Task Force Group from publicly available records for informational purposes in connection with Rezoning Application ZONG-2026-000013.



1310 E DIEHL AVE.

SITE PLAN

110 1 BEDROOM 55+ UNITS
1 BUILDING / 5 STORY MAX
.5 PARKING SPOTS REQUIRED PER UNIT
60 PARKING SPOTS - 55 REQUIRED



Request for an Updated Traffic Impact Study

1310 Diehl Avenue (ZONG-2026-000013)

July 30, 2026

Dear Mayor and Members of the Des Moines City Council:

We are writing on behalf of the Jordan Task Force regarding the approved rezoning for the proposed apartment development at 1310 Diehl Avenue (ZONG-2026-000013).

Although the rezoning has been approved, we respectfully request that the City require the developer to prepare an updated Traffic Impact Study before any remaining site plan approvals, engineering approvals, public infrastructure decisions, building permits, or certificates of occupancy are finalized.

This request is not intended to revisit the rezoning decision. It is intended to ensure that the remaining development review process is supported by current traffic data and current engineering analysis so that any transportation improvements needed to protect public safety are identified before construction and occupancy.

We support responsible growth and recognize the community's need for additional housing. Our request is simply that the proposed development be evaluated using current traffic engineering and safety analysis before the remaining approvals are granted. A project of this magnitude should be assessed using today's traffic conditions, current crash history, and current engineering standards—not information collected more than fifteen years ago.

The Existing Study Does Not Evaluate This Development

The traffic analysis referenced for this corridor was completed in January 2010. It relied on manual turning-movement counts and continuous traffic counts collected in 2008 and 2009, and it reviewed crash data from an earlier period. The study evaluated SE 14th Street corridor operations between McKinley Avenue and Army Post Road, including signal operations and possible signal locations. It did not evaluate the access and circulation pattern proposed for the current apartment development.

The proposed development will not have direct vehicular access to SE 14th Street. Based on the access configuration presented during the development review process, traffic will first enter a private street, connect to Diehl Avenue, and then use shared commercial access before reaching SE 14th Street. Residents, visitors, delivery drivers, service providers, refuse vehicles, moving trucks, and emergency responders will all depend on this network.

Even with the planned extension of Porter Avenue and new sidewalks to the east, there will still be no direct vehicular connection from the apartment development to SE 14th Street. Pedestrian improvements are valuable, but they do not change the primary vehicle access pattern or eliminate the need to evaluate vehicle circulation, queues, turning conflicts, and emergency access.

Diehl Avenue Traffic Has Already Increased Substantially

The City's own records show how development has changed traffic conditions on Diehl Avenue. A 1994 count documented approximately 1,290 vehicles per day on Diehl Avenue. By April 2009, City counts documented approximately 2,900 vehicles per day on Diehl Avenue west of SE 14th Street on Friday and Saturday, and approximately 2,500 vehicles per day between the Menards access and SE 8th Street. In other words, the higher 2009 count was more than double the 1994 count.

The 2009 City report also described Diehl Avenue as the natural residential collector street for the surrounding neighborhood and acknowledged that it carries more traffic than some nearby residential streets. City staff recommended continued analysis of traffic conditions on Diehl Avenue and continued work with affected residents regarding enforcement, signage, and other traffic controls.

Those findings matter today because the proposed apartment development would add another significant source of daily traffic to the same collector street and signalized intersection. Current traffic counts are necessary to determine how much traffic Diehl Avenue carries now, how much additional traffic the apartment development would generate at full occupancy, and whether the existing roadway and access system can safely accommodate that increase.

The City Has Previously Required Traffic Mitigation When Development Increased Demand

The City has a well-documented history of requiring traffic analysis and improvements when development changes conditions along this corridor. When the Menards development was proposed, the City required a private connection to Diehl Avenue as a condition of site plan approval. The Iowa Department of Transportation concurred with the traffic plan and participated in the cost of signal installation and minor widening on Diehl Avenue, including a left-turn lane. Temporary signals were installed in 1997, and permanent signals and widening were completed in 1998.

In 2009, when additional development was proposed in the corridor, the City again studied traffic conditions, collected new counts, measured speeds and truck traffic, reviewed turning movements, and retained an outside engineering consultant for a corridor-wide traffic analysis. Menards contributed \$10,000 toward that professional study.

This request is therefore based on consistency. Previous major developments along SE 14th Street and Diehl Avenue were evaluated using then-current traffic data and, where appropriate, were required to incorporate access modifications, signalization, roadway widening, turn lanes, or other mitigation. The proposed apartment development should receive the same level of professional engineering review using current conditions.

School, Pedestrian, and Neighborhood Safety

Lovejoy Elementary School uses both Porter Avenue and Kenyon Avenue for morning drop-off and afternoon pick-up. These periods already involve school buses, frequent turning movements, vehicle queues, children crossing streets, parents, staff, and neighborhood residents. A current Traffic Impact Study should evaluate how apartment traffic will interact with school arrival and dismissal periods and whether additional safety measures are required.

The City's historical records also show that traffic control and pedestrian safety near Lovejoy Elementary have been concerns for decades. A 1996 Traffic Safety Committee report noted designated school routes near SE 8th Street and Diehl Avenue and evaluated traffic controls and pedestrian crossings in the area. The proposed development should therefore be reviewed not only for vehicle capacity, but also for pedestrian exposure, bicycle travel, sight distance, crossing conditions, and safe routes to school.

Existing Crash History Requires Current Review

The 2010 corridor analysis documented 26 reported crashes at SE 14th Street and Diehl Avenue during the five-year period it reviewed, including failure-to-yield and following-too-closely crashes. Although that historical information demonstrates that the intersection has long required careful attention, it cannot substitute for current crash data.

A new Traffic Impact Study should evaluate the most recent available five years of crash records, identify current patterns and contributing circumstances, and determine whether additional traffic from the proposed development could increase turning conflicts, queues, rear-end risk, pedestrian exposure, or emergency access concerns.

Emergency and Construction Access

The study should specifically evaluate whether the project provides reliable emergency access if the private street or shared commercial access is blocked, congested, under repair, or affected by a crash. It

should include fire apparatus, ambulance access, turning radii, fire-lane operation, queue spillback, and the ability to enter and leave the development during peak conditions.

Construction traffic should also be addressed. Dump trucks, concrete trucks, equipment deliveries, utility contractors, and other construction vehicles could place temporary but substantial demands on Diehl Avenue and the shared commercial access. A construction traffic management plan should be required before major construction activity begins.

Requested Scope of the Updated Traffic Impact Study

- Current weekday and weekend traffic volumes on Diehl Avenue, the private street, SE 14th Street, Porter Avenue, Kenyon Avenue, and relevant commercial accesses.
- Current turning-movement counts during morning, school-arrival, afternoon, school-dismissal, evening, and Saturday peak periods.
- Trip generation and distribution for the apartment development at full occupancy, including residents, visitors, deliveries, service vehicles, refuse collection, moving vehicles, and rideshare activity.
- Operation of the private street, Diehl Avenue, and the shared commercial access, including queue lengths, delay, turning conflicts, storage capacity, sight distance, access spacing, and gap acceptance.
- Interaction with Lovejoy Elementary School traffic, school buses, student crossings, and safe routes to school.
- Pedestrian and bicycle access, crossing conditions, sidewalk continuity, ADA accessibility, and conflicts at driveways and intersections.
- Emergency vehicle access, secondary-access reliability, turning radii, fire-lane operation, and access during congestion or blockage.
- The most recent available five years of crash history and a review of crash patterns and contributing factors.
- Cumulative traffic impacts from existing, approved, and reasonably foreseeable nearby residential and commercial development.
- Construction traffic and a construction traffic management plan.
- Whether roadway, intersection, signal-timing, turn-lane, access, signage, crossing, lighting, or other safety improvements should be completed before occupancy.

Formal Request

Accordingly, the Jordan Task Force respectfully requests that the City require the developer to prepare a new Traffic Impact Study in accordance with current professional engineering standards and subject to review and approval by the City's Engineering Department before final site plan approval, engineering approval, public infrastructure approval, building permits, or certificates of occupancy are issued.

We further request that any improvements identified as necessary for safe operation be incorporated into the approved plans, assigned to the responsible party, and completed before occupancy unless the City Engineer documents a specific and reasonable alternative schedule.

This is a practical public-safety request supported by the City's own history of traffic planning in this corridor. Significant development has repeatedly led the City to collect new traffic data, conduct professional analysis, modify access, and require infrastructure improvements. The same careful and consistent approach should be applied now.

We appreciate the City Council's commitment to responsible growth and respectfully ask that this development be evaluated using today's traffic conditions, today's engineering standards, and today's understanding of public safety—not traffic information collected more than fifteen years ago.

Thank you for your continued service to our community and for your thoughtful consideration of this request.

Respectfully submitted,

Jordan Task Force

Representing residents and stakeholders of the Jordan Park neighborhood

Sources cited in this request:

- City of Des Moines, Traffic Safety Committee Item #1, “Request to Review Traffic Controls—SE 8th and Diehl,” May 14, 1996.
- City of Des Moines, Council Communication, “Menards Traffic Study—SE 14th Street and Diehl Avenue,” April 20, 2009.
- Snyder & Associates, “Southeast 14th Street Project Traffic Analysis,” January 8, 2010 (Draft).
- City of Des Moines Engineering Department correspondence and agreement concerning the 2009 SE 14th Street Traffic Study.

ATTACHMENT INDEX

Attachment	Document
Attachment A	Historical Timeline of Traffic Planning - SE 14th Street and Diehl Avenue
Attachment B	Applicant's Current Development Plans
Attachment C	April 14, 2009 Traffic Safety Committee Report (Menards Traffic Study)
Attachment D	April 20, 2009 Council Communication (Menards Traffic Study)
Attachment E	April 21, 2009 Engineering Correspondence (Gary Fox Email and Supporting Documents)
Attachment F	January 8, 2010 Snyder & Associates SE 14th Street Traffic Analysis

ATTACHMENT A**Historical Timeline of Traffic Planning
SE 14th Street and Diehl Avenue**

Date	Event / Finding
1994	Stop signs were installed on Diehl Avenue at SE 8th Street. A later City review noted that the intersection is close to Lovejoy Elementary and designated school routes.
1994	Traffic count on Diehl Avenue: approximately 1,290 vehicles per day.
1996-1998	Menards development prompted traffic analysis, a required private connection to Diehl Avenue, signal installation at SE 14th and Diehl, and minor widening with a left-turn lane.
1997	SE 14th Street count: approximately 31,700 vehicles per day.
2004	SE 14th Street count: approximately 32,000 vehicles per day.
April 2009	City counts documented approximately 2,900 vehicles per day on Diehl west of SE 14th on Friday and Saturday, and approximately 2,500 vehicles per day between the Menards access and SE 8th.
April 2009	City staff described Diehl as the natural residential collector street and recommended continued traffic analysis and work with residents regarding enforcement, signs, and other controls.
2009	The City retained Snyder & Associates for a corridor-wide traffic study. Menards contributed

Date	Event / Finding
	\$10,000 toward the study.
January 2010	The draft corridor analysis relied on traffic counts collected in 2008 and 2009 and evaluated corridor operations and crash history.
2026	A major apartment development is proposed at 1310 Diehl Avenue without direct vehicular access to SE 14th Street.
Current Request	Require a new Traffic Impact Study using current counts, current crash history, the proposed access plan, school traffic, pedestrian and bicycle conditions, emergency access, construction traffic, and cumulative development impacts.

KEY FINDINGS FROM THE ATTACHED CITY RECORDS

Traffic on Diehl more than doubled between the cited 1994 count and the higher 2009 Friday/Saturday count. 1994: approximately 1,290 vehicles/day; 2009: approximately 2,900 vehicles/day west of SE 14th.

Development previously triggered traffic mitigation. The City required access through adjacent property, signalization, minor widening, and a left-turn lane in connection with Menards.

Diehl is a residential collector. City staff described Diehl as the natural residential collector for neighborhood access to the SE 14th traffic signal.

The City recommended continued monitoring. The 2009 recommendation called for continued analysis of Diehl traffic and continued work with residents on appropriate controls.

The 2010 study is not a project-specific analysis for the proposed apartments. It was a corridor analysis based on 2008-2009 counts and did not evaluate the current apartment access configuration.

School safety has long been relevant. The 1996 report evaluated traffic controls, school routes, and crossings near Lovejoy Elementary.

A current study is consistent with past City practice. Past development decisions were supported by current counts, engineering analysis, access changes, and infrastructure improvements.

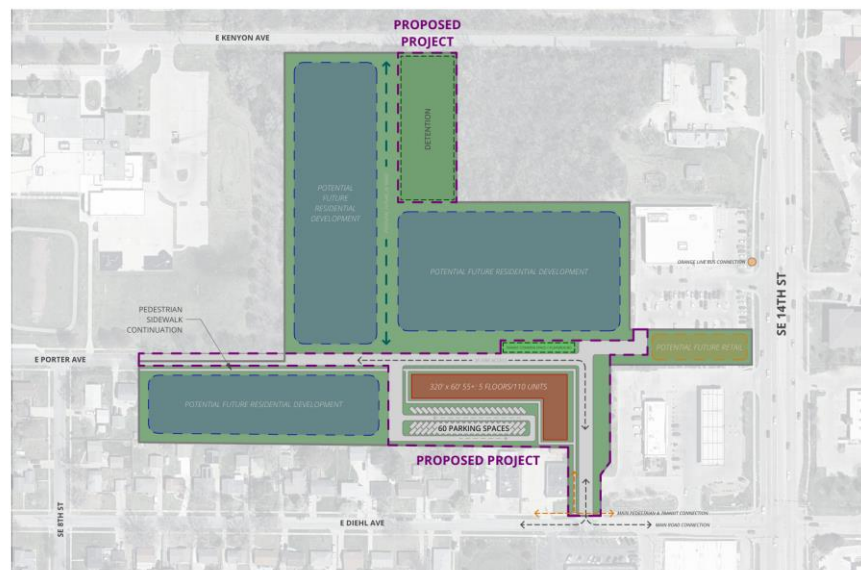
Applicant's Current Development Plans

The applicant's current plans illustrate the proposed access configuration, surrounding land uses, pedestrian facilities, future roadway connections, and development pattern. These materials were not evaluated in the 2010 corridor study and further support the need for an updated Traffic Impact Study before remaining approvals.

Figure B-1 – Proposed Site Plan

1310 E DIEHL AVE. SITE PLAN

110 1 BEDROOM 55+ UNITS
1 BUILDING / 5 STORY MAX
.5 PARKING SPOTS REQUIRED PER UNIT
60 PARKING SPOTS - 55 REQUIRED



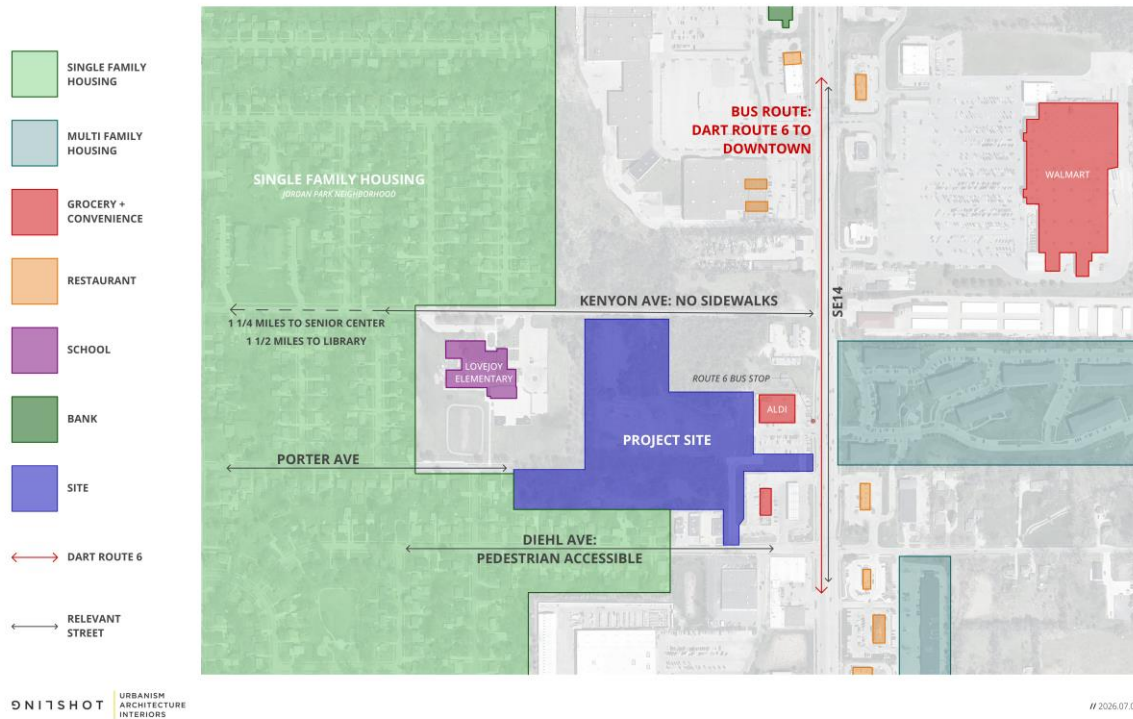
DNITSHOT URBANISM
ARCHITECTURE
INTERIORS

2026.05.14

Applicant's site plan showing the proposed five-story, 110-unit development, internal roadway, Diehl Avenue access, pedestrian/transit connection, fire access, detention area, and future development areas. These plans support the need for a project-specific Traffic Impact Study.

Figure B-2 – Context Diagram

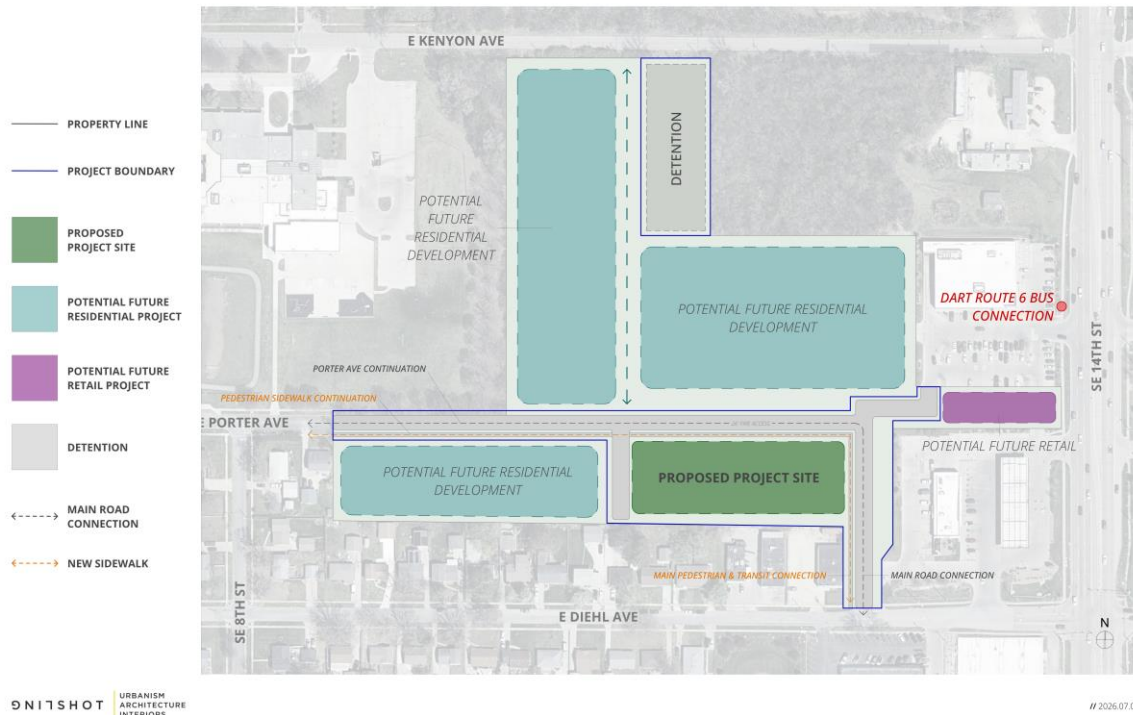
CONTEXT DIAGRAM



Context diagram showing the relationship to Lovejoy Elementary School, surrounding neighborhoods, DART Route 6, nearby commercial uses, and pedestrian connections.

Figure B-3 – Site Diagram

SITE DIAGRAM



Site diagram illustrating the roadway network, Porter Avenue continuation, sidewalks, project boundaries, fire access, detention area, and future development.

Additional Attachments Included with this Email

- **Attachment C** – April 14, 2009 Traffic Safety Committee Report (Menards Traffic Study)
- **Attachment D** – April 20, 2009 Council Communication (Menards Traffic Study)
- **Attachment E** – April 21, 2009 Engineering Correspondence (Gary Fox Email and Supporting Documents)
- **Attachment F** – January 8, 2010 Snyder & Associates SE 14th Street Traffic Analysis

ITEM #1: Menards Traffic Study – SE 14th Street and Diehl Avenue

BACKGROUND:

At their April 6 meeting, the City Council referred a study of traffic conditions around the Menards store at SE 14th Street and Diehl Avenue to the Traffic Safety Committee for their review and recommendation for the continuation of the public hearing at the April 20 Council meeting. Menards has applied for a rezoning of some property to allow them to expand the existing store to add a garden center on the north side of the property, in addition to some other changes to the site.

Residents from the South Park Neighborhood Association and the Jordan Task Force Group have raised concerns about the impacts of both the existing store and this proposed expansion, including traffic impacts. The primary traffic concern is that the main driveway for the store is not signalized, and some delivery trucks and customers use a driveway that connects to Diehl Avenue to access the traffic signal at SE 14th Street and Diehl Avenue. These residents have requested installation of a traffic signal at the Menards main drive and closing the drive to Diehl except for fire vehicle access.

Existing Menards Site Development

In 1990, as part of the development of the WalMart and Venture (now Home Depot, Best Buy, etc.) sites on SE 14th Street south of McKinley Avenue, the City conducted a study of potential future signal locations along SE 14th Street between the existing signals at McKinley Avenue south to Cummins Road, to determine which locations would provide the best opportunities for major access points while preserving the ability to carry through traffic along this important corridor. This study showed that the best signalized access points were a combined location serving WalMart and Venture and a future signal at Diehl Avenue. The combined driveways and signalized access at WalMart/Venture were constructed as part of those developments.

In 1996, Menards presented a development plan to the City to construct a new store at the site of the former SE 14th Street drive-in theatre at 6000 SE 14th Street. This site had direct access to a median opening on SE 14th Street (US 69) at Hart Avenue, approximately 700 feet south of Diehl Avenue. Because of the volume of traffic that would be generated by the new Menards store, a signalized access location would be needed on SE 14th Street.

Prior to 1996, the City had received complaints from residents in the general area of Diehl Avenue west of SE 14th Street that traffic signals were needed at this intersection, because of the high traffic volume on SE 14th (1997 count of 31,700 vehicles per day). However, the traffic volume on Diehl (1994 count of 1,290 vehicles per day) was somewhat below the volume to warrant signals, and the City did not have funding programmed for signals. The Menards traffic study showed that by connecting a drive to Diehl and having a portion of the exiting traffic from Menards use Diehl Avenue, a signal was warranted at the intersection of Diehl Avenue and SE 14th Street. The City

required Menards to provide a private access through the adjacent property (Bowlerama) to connect to Diehl Avenue as a condition of their site plan approval. This requirement was similar to cross-access connections required for many other site plans throughout the City along major arterial roadways with raised medians to control access.

The Iowa Department of Transportation concurred with the Menards traffic study and traffic plan, and approved and paid one-half the cost of the signal installation and some minor widening on Diehl Avenue to provide a left-turn lane at the signalized intersection. The City installed a temporary traffic signal at the intersection in October 1997 prior to the opening of the Menards store in January 1998. The permanent traffic signals and minor widening on Diehl Avenue were completed in the summer of 1998.

Proposed Menards Expansion

SE 14th Street is a major highway (US 69) which carries heavy traffic loads (2004 volume of 32,000 vehicles per day), including through commercial vehicles and commuter traffic, commercial delivery vehicles and other local traffic. It provides the primary access to a major regional shopping center (Southridge), as well as to this entire commercial corridor. The importance of this corridor as a vital traffic corridor is increased because there are no other major north-south arterial roadways in this part of the City, especially crossing the Des Moines River. If traffic delays and congestion become excessive on SE 14th Street, local traffic and commuter traffic will seek other less congested routes, such as SE 5th Street, which go through residential neighborhoods and are not suitable to carry extra diverted traffic.

The existing driveway configuration for the Menards store serves the traffic well, both commercial vehicles and customers. Three of the four major movements (right turns into Menards, left turns into Menards, and right turns from Menards) occur at the main drive on SE 14th Street and do not need traffic signals to operate safely. During non-peak times, many vehicles making left turns from Menards can also use this drive without excessive delay. Trucks, vehicles with trailers and other slower vehicles can easily access the traffic signal at Diehl Avenue using the drive connection, especially during the peak traffic times. This drive connects to Diehl Avenue just east of the Bowlerama building, in the commercially zoned area and a significant distance east of any residential properties.

Currently, there are five signalized intersections on SE 14th Street in the one-mile section from Army Post Road to McKinley Avenue. The typical (and preferable) spacing for signals from McKinley Avenue north to I-35/80 is generally one-half mile. The City operates a computerized traffic signal system along both SE and E 14th Streets, and is able to provide generally good traffic flow, with minimal stops and delays for traffic. If a signal were added at the main Menards drive, the resulting close spacing for this signal would seriously disrupt the traffic flow and substantially increase stops, delay and congestion on SE 14th Street, along with increased potential for rear-end collisions.

If the signal at Diehl Avenue were removed and relocated to the Menards main drive, there would not be an additional signal, but the signal spacing would still cause substantial disruption to the traffic flow. In addition, the loss of the signal at Diehl would negatively impact the ability to enter or cross SE 14th Street from both the east and the west. The signal at Diehl provides good accessibility for a significant residential area west of SE 14th Street, a smaller residential area east of SE 14th Street, and both current and future commercial development on both sides of SE 14th Street. With a hillcrest on SE 14th Street north of Diehl, removal of this signal would also substantially reduce the safety for all motorists at this intersection.

While the existing drive connection from Menards to Diehl provides needed access to the signal, it also creates some additional potential for trucks to cut back west on Diehl through the residential area. The City has previously installed a NO TRUCKS sign on Diehl just west of this drive connection, and Menards has just recently installed a STOP sign for the drive. The City is obtaining traffic data for Diehl Avenue west of SE 14th Street beginning Thursday and continuing through the weekend to measure the volume and speed of traffic and the number of trucks. The results of this traffic count will be presented to the Committee at the meeting.

Previous observations of the traffic conditions on Diehl Avenue have not indicated that there is a large amount of truck traffic or cut-through commuter traffic. Based on the overall street layout for the residential area west of SE 14th Street, Diehl serves as the natural residential collector street, especially for the neighborhood to access the traffic signal, so it does carry more traffic than some of the other residential streets. Staff will use the results of the traffic count to help determine if speed enforcement, additional signing or other traffic control measures may be needed on Diehl Avenue.

STAFF RECOMMENDATION:

Staff recommends the following in conjunction with the proposed Menards expansion:

1. The existing traffic signal at SE 14th Street and Diehl Avenue should remain in place to provide safe and convenient access for the residential and commercial areas both east and west of SE 14th Street.
2. A new signal should not be installed at the main drive to Menards on SE 14th Street, as the resulting close signal spacing would cause serious disruption to the traffic flow, along with a resulting increase in stops, delay and congestion, and accident potential.
3. The existing drive connection from Menards to Diehl should not be closed or blocked off for only fire vehicle access.
4. Staff should continue to analyze the traffic conditions on Diehl Avenue and work with the affected residents to determine appropriate speed enforcement, additional signing or other traffic control measures that may be needed.

ITEM #1: Menards Traffic Study – SE 14th Street and Diehl Avenue

BACKGROUND:

At their April 6 meeting, the City Council referred a study of traffic conditions around the Menards store at SE 14th Street and Diehl Avenue to the Traffic Safety Committee for their review and recommendation for the continuation of the public hearing at the April 20 Council meeting. Menards has applied for a rezoning of some property to allow them to expand the existing store to add a garden center on the north side of the property, in addition to some other changes to the site.

Residents from the South Park Neighborhood Association and the Jordan Task Force Group have raised concerns about the impacts of both the existing store and this proposed expansion, including traffic impacts. The primary traffic concern is that the main driveway for the store is not signalized, and some delivery trucks and customers use a driveway that connects to Diehl Avenue to access the traffic signal at SE 14th Street and Diehl Avenue. These residents have requested installation of a traffic signal at the Menards main drive and closing the drive to Diehl except for fire vehicle access.

Existing Menards Site Development

In 1990, as part of the development of the WalMart and Venture (now Home Depot, Best Buy, etc.) sites on SE 14th Street south of McKinley Avenue, the City conducted a study of potential future signal locations along SE 14th Street between the existing signals at McKinley Avenue south to Cummins Road, to determine which locations would provide the best opportunities for major access points while preserving the ability to carry through traffic along this important corridor. This study showed that the best signalized access points were a combined location serving WalMart and Venture and a future signal at Diehl Avenue. The combined driveways and signalized access at WalMart/Venture were constructed as part of those developments.

In 1996, Menards presented a development plan to the City to construct a new store at the site of the former SE 14th Street drive-in theatre at 6000 SE 14th Street. This site had direct access to a median opening on SE 14th Street (US 69) at Hart Avenue, approximately 700 feet south of Diehl Avenue. Because of the volume of traffic that would be generated by the new Menards store, a signalized access location would be needed on SE 14th Street.

Prior to 1996, the City had received complaints from residents in the general area of Diehl Avenue west of SE 14th Street that traffic signals were needed at this intersection, because of the high traffic volume on SE 14th (1997 count of 31,700 vehicles per day). However, the traffic volume on Diehl (1994 count of 1,290 vehicles per day) was somewhat below the volume to warrant signals, and the City did not have funding programmed for signals. The Menards traffic study showed that by connecting a drive to Diehl and having a portion of the exiting traffic from Menards use Diehl Avenue, a signal was warranted at the intersection of Diehl Avenue and SE 14th Street. The City

required Menards to provide a private access through the adjacent property (Bowlerama) to connect to Diehl Avenue as a condition of their site plan approval. This requirement was similar to cross-access connections required for many other site plans throughout the City along major arterial roadways with raised medians to control access.

The Iowa Department of Transportation concurred with the Menards traffic study and traffic plan, and approved and paid one-half the cost of the signal installation and some minor widening on Diehl Avenue to provide a left-turn lane at the signalized intersection. The City installed a temporary traffic signal at the intersection in October 1997 prior to the opening of the Menards store in January 1998. The permanent traffic signals and minor widening on Diehl Avenue were completed in the summer of 1998.

Proposed Menards Expansion

SE 14th Street is a major highway (US 69) which carries heavy traffic loads (2004 volume of 32,000 vehicles per day), including through commercial vehicles and commuter traffic, commercial delivery vehicles and other local traffic. It provides the primary access to a major regional shopping center (Southridge), as well as to this entire commercial corridor. The importance of this corridor as a vital traffic corridor is increased because there are no other major north-south arterial roadways in this part of the City, especially crossing the Des Moines River. If traffic delays and congestion become excessive on SE 14th Street, local traffic and commuter traffic will seek other less congested routes, such as SE 5th Street, which go through residential neighborhoods and are not suitable to carry extra diverted traffic.

The existing driveway configuration for the Menards store serves the traffic well, both commercial vehicles and customers. Three of the four major movements (right turns into Menards, left turns into Menards, and right turns from Menards) occur at the main drive on SE 14th Street and do not need traffic signals to operate safely. During non-peak times, many vehicles making left turns from Menards can also use this drive without excessive delay. Trucks, vehicles with trailers and other slower vehicles can easily access the traffic signal at Diehl Avenue using the drive connection, especially during the peak traffic times. This drive connects to Diehl Avenue just east of the Bowlerama building, in the commercially zoned area and a significant distance east of any residential properties.

Currently, there are five signalized intersections on SE 14th Street in the one-mile section from Army Post Road to McKinley Avenue. The typical (and preferable) spacing for signals from McKinley Avenue north to I-35/80 is generally one-half mile. The City operates a computerized traffic signal system along both SE and E 14th Streets, and is able to provide generally good traffic flow, with minimal stops and delays for traffic. If a signal were added at the main Menards drive, the resulting close spacing for this signal would seriously disrupt the traffic flow and substantially increase stops, delay and congestion on SE 14th Street, along with increased potential for rear-end collisions.

If the signal at Diehl Avenue were removed and relocated to the Menards main drive, there would not be an additional signal, but the signal spacing would still cause substantial disruption to the traffic flow. In addition, the loss of the signal at Diehl would negatively impact the ability to enter or cross SE 14th Street from both the east and the west. The signal at Diehl provides good accessibility for a significant residential area west of SE 14th Street, a smaller residential area east of SE 14th Street, and both current and future commercial development on both sides of SE 14th Street. With a hillcrest on SE 14th Street north of Diehl, removal of this signal would also substantially reduce the safety for all motorists at this intersection.

While the existing drive connection from Menards to Diehl provides needed access to the signal, it also creates some additional potential for trucks to cut back west on Diehl through the residential area. The City has previously installed a NO TRUCKS sign on Diehl just west of this drive connection, and Menards has just recently installed a STOP sign for the drive. The City is obtaining traffic data for Diehl Avenue west of SE 14th Street beginning Thursday and continuing through the weekend to measure the volume and speed of traffic and the number of trucks. The results of this traffic count will be presented to the Committee at the meeting.

Previous observations of the traffic conditions on Diehl Avenue have not indicated that there is a large amount of truck traffic or cut-through commuter traffic. Based on the overall street layout for the residential area west of SE 14th Street, Diehl serves as the natural residential collector street, especially for the neighborhood to access the traffic signal, so it does carry more traffic than some of the other residential streets. Staff will use the results of the traffic count to help determine if speed enforcement, additional signing or other traffic control measures may be needed on Diehl Avenue.

STAFF RECOMMENDATION:

Staff recommends the following in conjunction with the proposed Menards expansion:

1. The existing traffic signal at SE 14th Street and Diehl Avenue should remain in place to provide safe and convenient access for the residential and commercial areas both east and west of SE 14th Street.
2. A new signal should not be installed at the main drive to Menards on SE 14th Street, as the resulting close signal spacing would cause serious disruption to the traffic flow, along with a resulting increase in stops, delay and congestion, and accident potential.
3. The existing drive connection from Menards to Diehl should not be closed or blocked off for only fire vehicle access.
4. Staff should continue to analyze the traffic conditions on Diehl Avenue and work with the affected residents to determine appropriate speed enforcement, additional signing or other traffic control measures that may be needed.

To: Ward IV Councilmember Brian Meyer
At-Large Councilmember Chris Coleman

From: Tom O'Neil, Menard, Inc. Real Estate Acquisitions

Date: Friday, April 24, 2009

Re: Menard, Inc. Commitments Related to Traffic

On Monday, April 20, 2009, The City of Des Moines City Council granted First Reading Approval to rezone certain properties owned by Wyckoff Industries for incorporation into the site plan improvements for the existing Menards store located at 6000 SE 14th Street. The First Reading Approval was conditioned upon Menard, Inc.'s further examination of traffic associated with our store, the effect of that traffic on nearby city streets, and a proposed response from Menard, Inc. related to rectifying the perceived negative effects of that traffic associated with our store. This Memorandum encapsulates our commitments in that regard.

Short Term Improvements

1. Menard, Inc. agrees to fund and construct that median and radii widening in Diehl as suggested pursuant to the proposed E Diehl Avenue Modifications prepared by the Des Moines Engineering Department – Traffic & Transportation Division, on April 17, 2009. Such improvements should discourage northbound traffic exiting the Access Drive from making a westbound turning movement onto Diehl, and should allow an easier turning movement for northbound traffic exiting the Access Drive and making an eastbound turning movement onto Diehl.

2. If necessary, Menard, Inc. would expect the City of Des Moines to issue the necessary permits and approvals to conduct the work and to exercise its condemnation powers to acquire that ROW / permanent easement outside of the existing ROW of Diehl necessary for the radii widening suggested by the Traffic & Transportation Division referenced above. This would be for the public purpose of enhancing the health, safety, and general welfare of the public by both reducing and calming westbound traffic on Diehl, and ensuring fewer turning movement conflicts for eastbound traffic on Diehl. Menard, Inc. would reimburse the City of Des Moines any monies expended for purposes of the ROW Acquisition, in an amount not to exceed \$15,000.

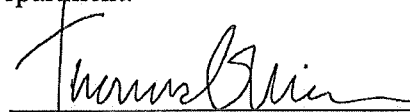
3. Menard, Inc. would agree to contribute \$10,000 to the City of Des Moines towards a corridor-wide traffic study of SE 14th Street and signalization thereon coordinated with the Iowa Department of Transportation, if such a study is undertaken. In addition to those study parameters suggested by the City of Des Moines Traffic Engineering Department, the study would specifically examine 1.) The installation of an additional signal at the Menards entrance on SE 14th Street, and 2.) The relocation of the existing Cummings signal to the Menards entrance on SE 14th Street.

Long Term Improvements

1. In the event the Traffic Study referenced above concludes that SE 14th Street would function at an acceptable Level of Service with either 1.) the installation of an additional signal at the Menards entrance on SE 14th Street, or 2.) the relocation of the existing Cummings Signal to the Menards entrance on SE 14th Street, and the City of Des Moines Traffic Engineering Department and Iowa Department of Transportation concurred with said traffic study and issued the necessary permits and approvals for the installation of said signal, Menard, Inc. agrees to fund and install the signal. Menard, Inc.'s scope of improvements shall be limited to the signal and shall not include further lane widening, repaving, or other changes to SE 14th Street. Menard, Inc. would expect the City of Des Moines and the Iowa Department of Transportation to issue the necessary permits and approvals to conduct the work and, if necessary, that the City of Des Moines would exercise its condemnation powers to acquire that ROW / permanent easement outside of the existing ROW of SE 14th Street necessary for the traffic signal.

2. In the event the selected solution involves the relocation of the existing Cummings signal to the Menards entrance on SE 14th Street, Menard, Inc. further agrees to fund and remove the existing Cummings signal.

3. In the event a signal is authorized and installed at the Menards entrance on SE 14th Street, Menard, Inc. agrees to fund and install a barricade at the northeast corner of the Menards site plan closing off the direct Access Drive to Diehl, in accordance with a design approved by a Menard, Inc., the City of Des Moines Traffic & Transportation Division, and the City of Des Moines Fire Department.



Menard, Inc., a Wisconsin corporation
Thomas W. O'Neil
Real Estate Acquisitions and Development

 Council Communication Office of the City Manager	Date	April 20, 2009
	Agenda Item No. Roll Call No. <u>09-</u> Communication No. <u>09-</u> Submitted by: Jeb E. Brewer, P.E. City Engineer	

AGENDA HEADING:

Menards Traffic Study – SE 14th Street and Diehl Avenue.

SYNOPSIS:

At their April 6 meeting, the City Council referred a study of traffic conditions around the Menards store at SE 14th Street and Diehl Avenue to the Traffic Safety Committee for their review and recommendation. The City took traffic counts on Diehl Avenue west of SE 14th Street beginning Thursday, April 9 and continuing through the weekend to measure the volume and speed of traffic and the number of trucks. A detailed turning movement count was also conducted at the Menards driveways during the high traffic period on Saturday, April 11 from 1 – 2 p.m. The traffic counts, as well as observations of the traffic conditions on Diehl Avenue, do not indicate that there is a large amount of truck traffic or cut-through commuter traffic. The traffic volume, speed profile and percentage of trucks identified by this recent count are not excessive and are all typical of traffic conditions that would exist on other residential collector streets in the City. The results of the traffic study were presented to the Traffic Safety Committee at their April 14 meeting.

FISCAL IMPACT:

Amount: N.A.

Funding Source:

ADDITIONAL INFORMATION:

At their April 6 meeting, the City Council referred a study of traffic conditions around the Menards store at SE 14th Street and Diehl Avenue to the Traffic Safety Committee for their review and recommendation for the continuation of the public hearing at the April 20 Council meeting. Menards has applied for a rezoning of some property to allow them to expand the existing store to add a garden center on the north side of the property, in addition to some other changes to the site.

Residents from the South Park Neighborhood Association and the Jordan Task Force Group have raised concerns about the impacts of both the existing store and this proposed expansion, including traffic impacts. The primary traffic concern is that the main driveway for the store is not signalized, and some

delivery trucks and customers use a driveway that connects to Diehl Avenue to access the traffic signal at SE 14th Street and Diehl Avenue. These residents have requested installation of a traffic signal at the Menards main drive and closing the drive to Diehl Avenue, except for fire vehicle access.

Existing Menards Site Development

In 1990, as part of the development of the WalMart and Venture (now Home Depot, Best Buy, etc.) sites on SE 14th Street south of McKinley Avenue, the City conducted a study of potential future signal locations along SE 14th Street between the existing signals at McKinley Avenue south to Cummins Road, to determine which locations would provide the best opportunities for major access points while preserving the ability to carry through traffic along this important corridor. This study showed that the best signalized access points were a combined location serving WalMart and Venture and a future signal at Diehl Avenue. The combined driveways and signalized access at WalMart/Venture were constructed as part of those developments.

In 1996, Menards presented a development plan to the City to construct a new store at the site of the former SE 14th Street drive-in theatre at 6000 SE 14th Street. This site had direct access to a median opening on SE 14th Street (US 69) at Hart Avenue, approximately 700 feet south of Diehl Avenue. Because of the volume of traffic that would be generated by the new Menards store, a signalized access location would be needed on SE 14th Street.

Prior to 1996, the City had received complaints from residents in the general area of Diehl Avenue west of SE 14th Street that traffic signals were needed at this intersection, because of the high traffic volume on SE 14th (1997 count of 31,700 vehicles per day). However, the traffic volume on Diehl (1994 count of 1,290 vehicles per day) was somewhat below the volume to warrant signals, and the City did not have funding programmed for signals. The Menards traffic study showed that by connecting a drive to Diehl and having a portion of the exiting traffic from Menards use Diehl Avenue, a signal was warranted at the intersection of Diehl Avenue and SE 14th Street. The City required Menards to provide a private access through the adjacent property (Bowlerama) to connect to Diehl Avenue as a condition of their site plan approval. This requirement was similar to cross-access connections required for many other site plans throughout the City along major arterial roadways with raised medians to control access.

The Iowa DOT concurred with the Menards traffic study and traffic plan, and approved and paid ½ the cost of the signal installation and some minor widening on Diehl Avenue to provide a left-turn lane at the signalized intersection. The City installed a temporary traffic signal at the intersection in October 1997 prior to the opening of the Menards store in January 1998. The permanent traffic signals and minor widening on Diehl Avenue were completed in the summer of 1998.

Proposed Menards Expansion

SE 14th Street is a major highway (US 69) which carries heavy traffic loads (2004 volume of 32,000 vehicles per day), including through commercial vehicles and commuter traffic, commercial delivery

vehicles and other local traffic. It provides the primary access to a major regional shopping center (Southridge) as well as to this entire commercial corridor. The importance of this corridor as a vital traffic corridor is increased because there are no other major north-south arterial roadways in this part of the City, especially crossing the Des Moines River. If traffic delays and congestion become excessive on SE 14th Street, local traffic and commuter traffic will seek other less congested routes, such as SE 5th Street, which go through residential neighborhoods and are not suitable to carry extra diverted traffic.

The existing driveway configuration for the Menards store serves the traffic well, both commercial vehicles and customers. Three of the four major movements (right turns into Menards, left turns into Menards, and right turns from Menards) occur at the main drive on SE 14th Street and do not need traffic signals to operate safely. During non-peak times, many vehicles making left turns from Menards can also use this drive without excessive delay. Trucks, vehicles with trailers and other slower vehicles can easily access the traffic signal at Diehl Avenue using the drive connection, especially during the peak traffic times. This drive connects to Diehl Avenue just east of the Bowlerama building, in the commercially zoned area and a significant distance east of any residential properties.

Currently, there are five signalized intersections on SE 14th Street in the one-mile section from Army Post Road to McKinley Avenue. The typical (and preferable) spacing for signals from McKinley Avenue north to I-35/80 is generally one-half mile. The City operates a computerized traffic signal system along both SE and E 14th Streets, and is able to provide generally good traffic flow, with minimal stops and delays for traffic. If a signal were added at the main Menards drive, the resulting close spacing for this signal would seriously disrupt the traffic flow and substantially increase stops, delay and congestion on SE 14th Street, along with increased potential for rear-end collisions.

If the signal at Diehl Avenue were removed and relocated to the Menards main drive, there would not be an additional signal, but the signal spacing would still cause substantial disruption to the traffic flow. In addition, the loss of the signal at Diehl would negatively impact the ability to enter or cross SE 14th Street from both the east and the west. The signal at Diehl provides good accessibility for a significant residential area west of SE 14th Street, a smaller residential area east of SE 14th Street, and both current and future commercial development on both sides of SE 14th Street. With a hillcrest on SE 14th Street north of Diehl, removal of this signal would also substantially reduce the safety for all motorists at this intersection.

While the existing drive connection from Menards to Diehl provides needed access to the signal, it also creates some additional potential for trucks to cut back west on Diehl through the residential area. The City has previously installed a NO TRUCKS sign on Diehl just west of this drive connection, and Menards has just recently installed a STOP sign for the drive. The City took traffic counts on Diehl Avenue west of SE 14th Street beginning Thursday, April 9 and continuing through the weekend to measure the volume and speed of traffic and the number of trucks. The results of this traffic count were presented to the Committee at the meeting.

This traffic count showed a total of approximately 2,900 vehicles per day (vpd) on Diehl Avenue west of SE 14th Street on Friday and Saturday, reducing to about 1,700 vpd on Sunday. A separate count on Diehl between the Menards drive and SE 8th Street showed a total of about 2,500 vpd on Friday and Saturday, reducing to about 1,550 on Sunday. Speeds on Diehl were recorded about midway between SE 14th and SE 8th, with an average speed of approximately 25 mph and an 85th percentile speed of approximately 30 mph, similar for both eastbound and westbound traffic. The vehicle classification count showed that out of a total of approximately 8,200 vehicles over the four day period, only 20 (0.2%) were trucks large enough to be potentially in violation of the City's truck route ordinance. Diehl is not a designated truck route, so any through truck greater than 12,000 pounds gross vehicle weight would be in violation. However, garbage trucks or other trucks with a local delivery or pickup would not be in violation. The traffic volume, speed profile and percentage of trucks identified by this recent count are not excessive and are all typical of traffic conditions that would exist on other residential collector streets in the City.

A detailed turning movement count was also conducted at the Menards driveways during the high traffic period on Saturday, April 11 from 1 – 2 p.m. These counts showed a total of approximately 315 vehicles entering and exiting the Menards property during this one hour period. A total of 71 of the entering vehicles (23%) used the north driveway, with 38 (12%) coming from the west on Diehl and 33 (11%) coming from the east on Diehl (although 30-50% of those vehicles from the east went to the Bowlerama parking lot and not to Menards). A total of 242 of the entering vehicles (77%) used the main east drive from SE 14th Street, with 126 (40%) making a right turn from the north and 116 (37%) making a left turn from the south. For the exiting traffic, 179 vehicles (56%) used the north drive, with 46 (15%) turning left and 133 (42%) turning right onto Diehl. A total of 138 vehicles (44%) exited the east drive to SE 14th Street, with 118 (37%) turning right and 20 (6%) turning left.

These traffic patterns show that the driveway configuration is generally working as intended. The main drive on SE 14th Street provides easy access, and 77% of the arriving vehicles use that drive, with only 23% using the north drive and only 12% coming from the west on Diehl. This drive also provides an easy right turn exit for vehicles going south on SE 14th Street, and 37% of the total vehicles exit to the south. It is very difficult to make a left turn from this drive during peak traffic times, and only 6% of the exiting traffic made that left turn. The north drive to Diehl provides direct access to the signal at Diehl to accommodate the left-turning vehicles, and 42% of the exiting traffic made that movement. Only 15% of the exiting traffic turned left onto Diehl. Both the arrival and departure traffic patterns appear to fit expected demographics for the Menards customers, and the 12-15% of total customers from the north and west on Diehl is generally typical of the customer base in that area and does not indicate a large amount of cut through traffic. In addition, during this peak hour period, no trucks large enough to be prohibited by the City's truck route ordinance were observed, either on Diehl or using either of the Menards driveways.

Observations of the traffic conditions on Diehl Avenue also do not indicate that there is a large amount of truck traffic or cut-through commuter traffic. Based on the overall street layout for the residential area west of SE 14th Street, Diehl serves as the natural residential collector street, especially for the

neighborhood to access the traffic signal, so it does carry more traffic than some of the other residential streets. Staff will use the results of the traffic count to help determine if speed enforcement, additional signing or other traffic control measures may be needed on Diehl Avenue.

Based on the above conditions, staff recommends the following in conjunction with the proposed Menards expansion:

1. The existing traffic signal at SE 14th Street and Diehl Avenue should remain in place to provide safe and convenient access for the residential and commercial areas both east and west of SE 14th Street.
2. A new signal should not be installed at the main drive to Menards on SE 14th Street, as the resulting close signal spacing would cause serious disruption to the traffic flow, along with a resulting increase in stops, delay and congestion, and accident potential.
3. The existing drive connection from Menards to Diehl should not be closed or blocked off for only fire vehicle access.
4. Staff should continue to analyze the traffic conditions on Diehl Avenue and work with the affected residents to determine appropriate speed enforcement, additional signing or other traffic control measures that may be needed.

At their April 14, 2009 meeting, the Traffic Safety Committee approved the following recommendations:

1. The existing traffic signal at SE 14th Street and Diehl Avenue should remain in place to provide safe and convenient access for the residential and commercial areas both east and west of SE 14th Street.
2. The existing drive connection from Menards to Diehl should not be closed or blocked off for only fire vehicle access; however, it should be made a one-way exit for only right-turns onto Diehl.
3. Staff should continue to analyze the traffic conditions on Diehl Avenue and work with the affected residents to determine appropriate speed enforcement, additional signing or other traffic control measures that may be needed.

PREVIOUS COUNCIL ACTION(S):

Items regarding request from Menard, Inc. 1201 E. Diehl Avenue, to allow expansion of existing outdoor merchandise area and roofed garden center to north side of existing Menard's Store, subject to conditions **(Continued from 3-23-09)**.

Date: April 6, 2009

Roll Call Number: 09-583

Action: (A) Amending the 2020 Community Character Land Use Plan future land use designation, from Low Density Residential to Community Commercial. **Moved by Meyer to continue to the April 20 Council meeting at 5:00 P.M. Motion Carried 7-0.**

Date: April 6, 2009

Roll Call Number: 09-584

Action: (B) Hearing on rezoning of the property from "R1-60" (One-Family Low Density Residential) and "C-2" (General Retail and Highway Oriented Commercial) to Ltd. "C-2". Council Communication No. 09-213) **Moved by Meyer to continue to the April 20 Council meeting at 5:00 P.M. Motion Carried 7-0.**

Date: April 6, 2009

Roll Call Number: 09-585

Action: **WITHDRAWN** (C) First consideration of rezoning ordinance.

Date: April 6, 2009

Roll Call Number: 09-586

Action: (D) Communication from Jordan Task Force. **Moved by Meyer to receive and file. Motion Carried 7-0**

BOARD/COMMISSION ACTION(S): TRAFFIC SAFETY COMMITTEE

Date: April 14, 2009

Action: The Traffic Safety Committee approved the following recommendations:

1. The existing traffic signal at SE 14th Street and Diehl Avenue should remain in place to provide safe and convenient access for the residential and commercial areas both east and west of SE 14th Street.
2. The existing drive connection from Menards to Diehl should not be closed or blocked off for only fire vehicle access; however, it should be made a one-way exit for only right-turns onto Diehl.

3. Staff should continue to analyze the traffic conditions on Diehl Avenue and work with the affected residents to determine appropriate speed enforcement, additional signing or other traffic control measures that may be needed.

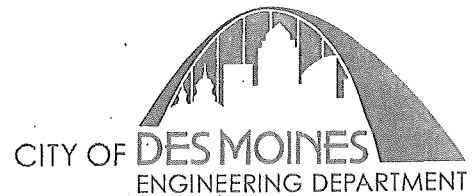
ANTICIPATED ACTIONS AND FUTURE COMMITMENTS:

None.

For more information on this and other agenda items, please call the City Clerk's Office at 515-283-4209 or visit the Clerk's Office on the second floor of City Hall, 400 Robert D. Ray Drive. Council agendas are available to the public at the City Clerk's Office on Thursday afternoon preceding Monday's Council meeting. Citizens can also request to receive meeting notices and agendas by email by calling the Clerk's Office or sending their request via email to cityclerk@dmgov.org.

Diehl Ave

April 8, 2009



Dear Resident or Business Person:

At their April 6 meeting, the City Council referred a study of traffic conditions around the Menards store at SE 14th Street and Diehl Avenue to the Traffic Safety Committee for their review and recommendation for the continuation of the public hearing at the April 20 Council meeting. Menards has applied for a rezoning of some property to allow them to expand the existing store to add a garden center on the north side of the property, in addition to some other changes to the site.

Enclosed is a copy of the agenda and the staff report and recommendation that will be presented to the Traffic Safety Committee at their next meeting, which will be at 7:30 a.m. on Tuesday, April 14, 2009. The meeting will be held in the Conference Room of the Traffic and Transportation Division, 600 E. Court Avenue, Suite 200. You are welcome to attend this meeting to provide comments or present any information to the Committee for their consideration. I have only sent this notice to a representative from South Park Neighborhood Association, Jordan Task Force and Menards, so please feel free to notify other interested persons.

If you have any questions, please contact my office.

Sincerely,

A handwritten signature in cursive script that reads "Gary L. Fox".

Gary L. Fox, P.E.
City Traffic Engineer

GLF/ms

Enclosure

cc: Brian Meyer, City Council Member
Richard Clark, City Manager
Larry Hulse, Community Development Director

DES MOINES TRAFFIC SAFETY COMMITTEE

APRIL 14, 2009

Agenda for the Des Moines Traffic Safety Committee scheduled for 7:30 a.m., Tuesday, April 14, 2009, at the Capitol Center Conference Room, 600 East Court Avenue, Suite 200. Parking is available in the parking lot on the south side of the building.

Traffic Safety Committee Rules and Procedures

1. The Traffic Safety Committee is an advisory body to the City Council.
 2. Staff will be given time to present the background on each item.
 3. Guests are then allowed to speak, with each speaker allowed a maximum of 5 minutes.
 4. All comments are to be germane to the issue under consideration and speakers are to maintain a courteous manner.
-

OLD BUSINESS

1. Minutes of the March 10, 2009 Meeting
2. Status Report
3. Request for Two-Sided Parking Restriction—
Pleasant Drive from 6115 Pleasant Drive to 62nd Street
4. Other Old Business

NEW BUSINESS

1. Menards Traffic Study – SE 14th Street and Diehl Avenue
2. 2009 Construction Projects Update
3. Other New Business



Gary L. Fox, Secretary
Traffic Safety Committee

GLF/ms

ITEM #1: Menards Traffic Study – SE 14th Street and Diehl Avenue

BACKGROUND:

At their April 6 meeting, the City Council referred a study of traffic conditions around the Menards store at SE 14th Street and Diehl Avenue to the Traffic Safety Committee for their review and recommendation for the continuation of the public hearing at the April 20 Council meeting. Menards has applied for a rezoning of some property to allow them to expand the existing store to add a garden center on the north side of the property, in addition to some other changes to the site.

Residents from the South Park Neighborhood Association and the Jordan Task Force Group have raised concerns about the impacts of both the existing store and this proposed expansion, including traffic impacts. The primary traffic concern is that the main driveway for the store is not signalized, and some delivery trucks and customers use a driveway that connects to Diehl Avenue to access the traffic signal at SE 14th Street and Diehl Avenue. These residents have requested installation of a traffic signal at the Menards main drive and closing the drive to Diehl except for fire vehicle access.

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Proposed Menards Expansion

SE 14th Street is a major highway (US 69) which carries heavy traffic loads (2004 volume of 32,000 vehicles per day), including through commercial vehicles and commuter traffic, commercial delivery vehicles and other local traffic. It provides the primary access to a major regional shopping center (Southridge), as well as to this entire commercial corridor. The importance of this corridor as a vital traffic corridor is increased because there are no other major north-south arterial roadways in this part of the City, especially crossing the Des Moines River. If traffic delays and congestion become excessive on SE 14th Street, local traffic and commuter traffic will seek other less congested routes, such as SE 5th Street, which go through residential neighborhoods and are not suitable to carry extra diverted traffic.

The existing driveway configuration for the Menards store serves the traffic well, both commercial vehicles and customers. Three of the four major movements (right turns into Menards, left turns into Menards, and right turns from Menards) occur at the main drive on SE 14th Street and do not need traffic signals to operate safely. During non-peak times, many vehicles making left turns from Menards can also use this drive without excessive delay. Trucks, vehicles with trailers and other slower vehicles can easily access the traffic signal at Diehl Avenue using the drive connection, especially during the peak traffic times. This drive connects to Diehl Avenue just east of the Bowlerama building, in the commercially zoned area and a significant distance east of any residential properties.

Currently, there are five signalized intersections on SE 14th Street in the one-mile section from Army Post Road to McKinley Avenue. The typical (and preferable) spacing for signals from McKinley Avenue north to I-35/80 is generally one-half mile. The City operates a computerized traffic signal system along both SE and E 14th Streets, and is able to provide generally good traffic flow, with minimal stops and delays for traffic. If a signal were added at the main Menards drive, the resulting close spacing for this signal would seriously disrupt the traffic flow and substantially increase stops, delay and congestion on SE 14th Street, along with increased potential for rear-end collisions.

If the signal at Diehl Avenue were removed and relocated to the Menards main drive, there would not be an additional signal, but the signal spacing would still cause substantial disruption to the traffic flow. In addition, the loss of the signal at Diehl would negatively impact the ability to enter or cross SE 14th Street from both the east and the west. The signal at Diehl provides good accessibility for a significant residential area west of SE 14th Street, a smaller residential area east of SE 14th Street, and both current and future commercial development on both sides of SE 14th Street. With a hillcrest on SE 14th Street north of Diehl, removal of this signal would also substantially reduce the safety for all motorists at this intersection.

While the existing drive connection from Menards to Diehl provides needed access to the signal, it also creates some additional potential for trucks to cut back west on Diehl through the residential area. The City has previously installed a NO TRUCKS sign on Diehl just west of this drive connection, and Menards has just recently installed a STOP sign for the drive. The City is obtaining traffic data for Diehl Avenue west of SE 14th Street beginning Thursday and continuing through the weekend to measure the volume and speed of traffic and the number of trucks. The results of this traffic count will be presented to the Committee at the meeting.

Previous observations of the traffic conditions on Diehl Avenue have not indicated that there is a large amount of truck traffic or cut-through commuter traffic. Based on the overall street layout for the residential area west of SE 14th Street, Diehl serves as the natural residential collector street, especially for the neighborhood to access the traffic signal, so it does carry more traffic than some of the other residential streets. Staff will use the results of the traffic count to help determine if speed enforcement, additional signing or other traffic control measures may be needed on Diehl Avenue.

STAFF RECOMMENDATION:

Staff recommends the following in conjunction with the proposed Menards expansion:

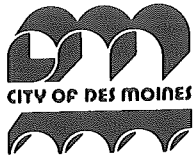
1. The existing traffic signal at SE 14th Street and Diehl Avenue should remain in place to provide safe and convenient access for the residential and commercial areas both east and west of SE 14th Street.
2. A new signal should not be installed at the main drive to Menards on SE 14th Street, as the resulting close signal spacing would cause serious disruption to the traffic flow, along with a resulting increase in stops, delay and congestion, and accident potential.
3. The existing drive connection from Menards to Diehl should not be closed or blocked off for only fire vehicle access.
4. Staff should continue to analyze the traffic conditions on Diehl Avenue and work with the affected residents to determine appropriate speed enforcement, additional signing or other traffic control measures that may be needed.

Store Manager
Menards
6000 SE 14th Street
Des Moines, IA 50320

Jan Goode
4501 SE 6th St
Des Moines, IA 50315

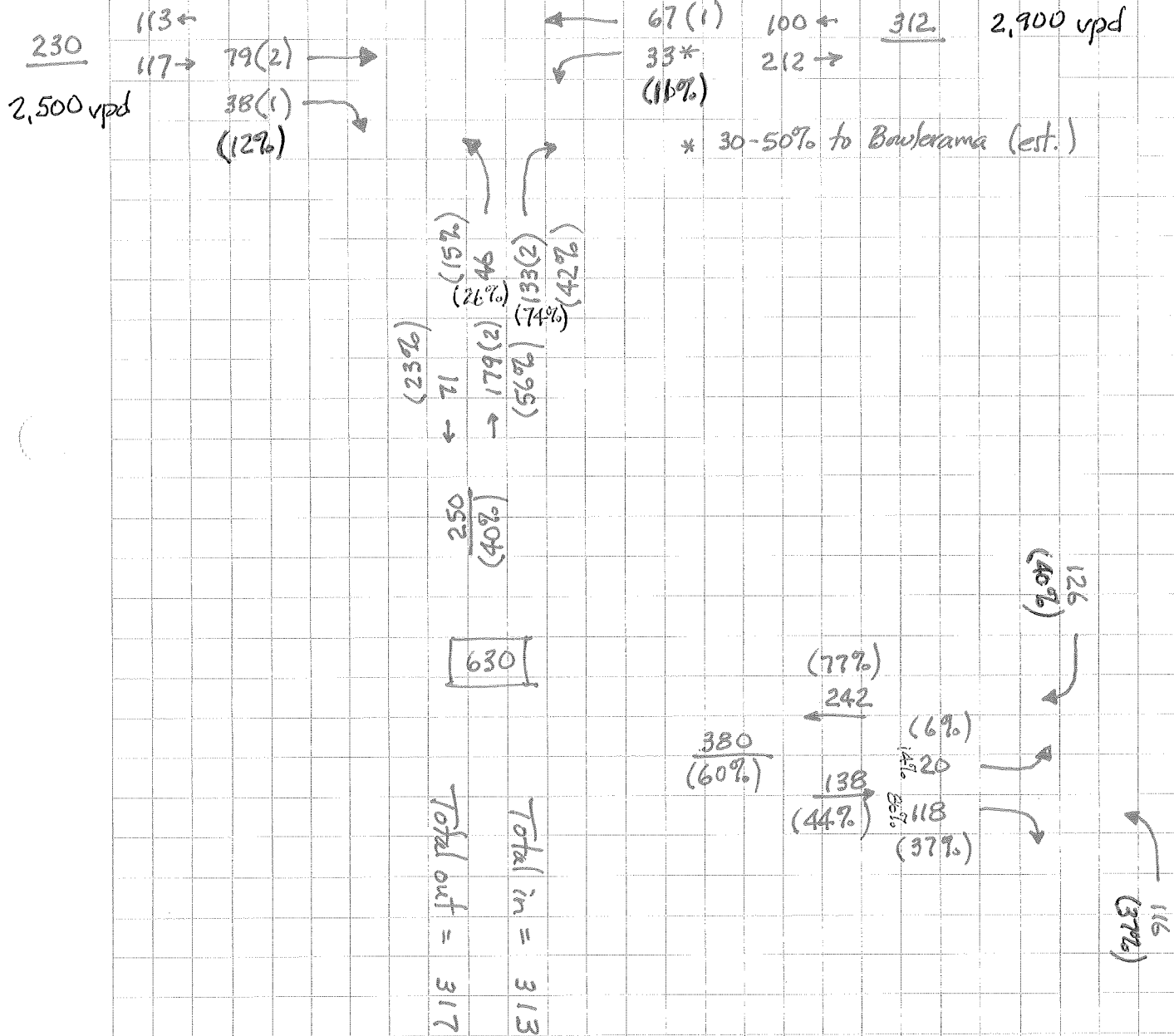
Michele Ogle-Riccelli
920 E. Diehl
Des Moines, IA 50315

Thomas W. O'Neil
Menard, Inc. Real Estate Acquisitions
4777 Menard Drive
Eau Claire, WI 54703



OFFICE OF
TRAFFIC AND
TRANSPORTATION
Armory Building
602 East 1st Street
Des Moines, Iowa 50309
(515) 283-4973

Location: Menards
Reference: Traffic Study
Date: 4/13/09 By: CE



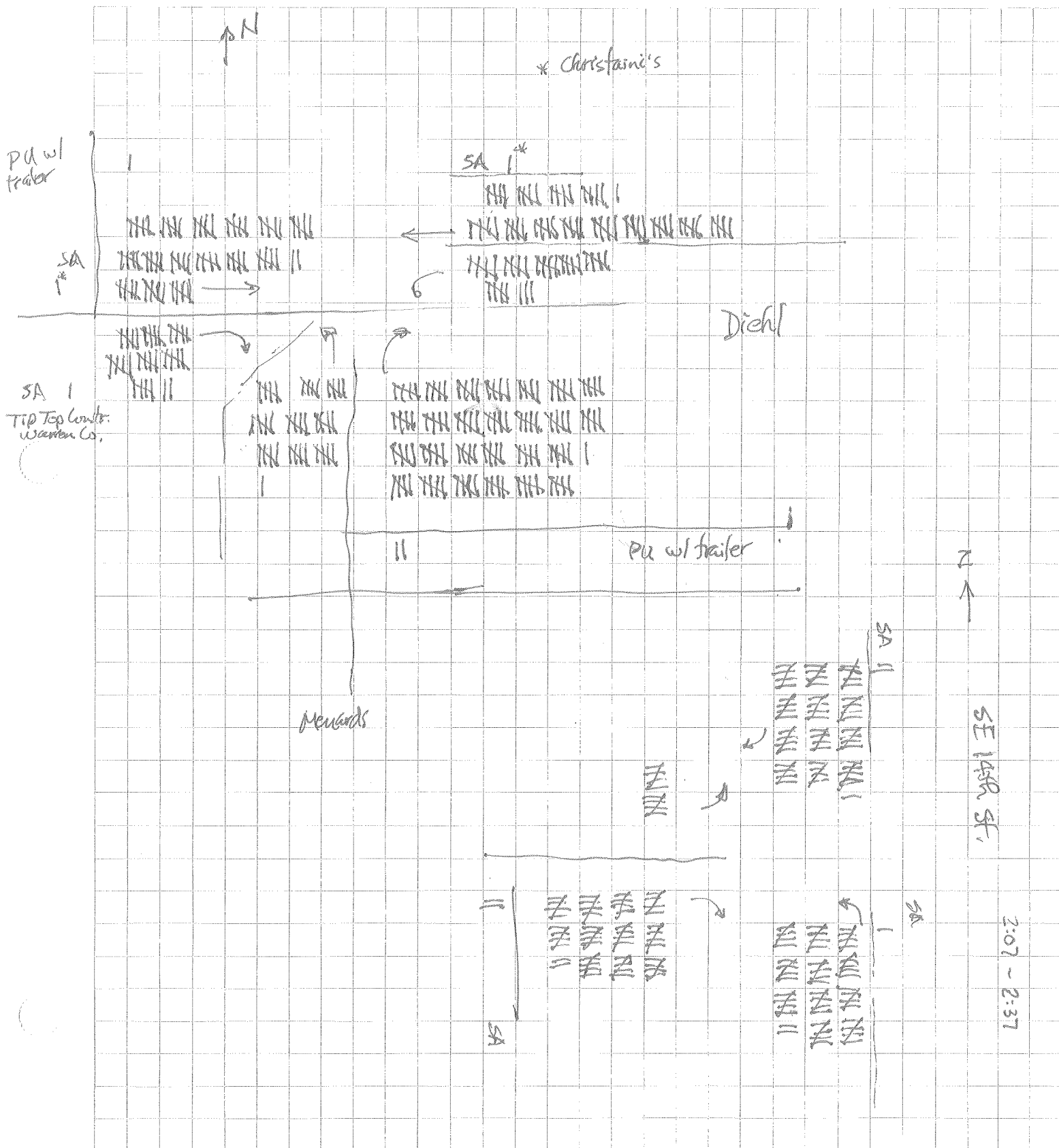
2:07 - 2:37

(515) 283-4973

Location: _____
Reference: _____

Date 4/16 Sat. By GF

1:00 - 2:00 PM



City of Des Moines
 Traffic & Transportation Division
 Tube Traffic Count
 600 E. Court, Suite 200

Site Code:
 Station ID:
 e of SE 8th Street
 Latitude: 0' 0.000 Undefined

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multl	6 Axle Multl	>6 Axl Multl	Classed	Not	Total
04/09/09	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	0	55	24	1	2	0	0	0	0	0	0	0	0	0	0	82
16:00	0	80	32	1	5	0	0	1	0	0	0	0	0	0	2	121
17:00	0	53	31	0	1	0	0	0	0	0	0	0	0	0	0	86
18:00	0	58	24	0	1	0	0	0	0	0	0	0	0	0	1	84
19:00	0	52	19	0	3	0	0	0	0	0	0	0	0	0	2	76
20:00	0	40	13	0	5	0	0	0	0	0	0	0	0	0	0	58
21:00	0	34	6	0	1	0	0	1	0	0	0	0	0	0	1	43
22:00	0	14	3	0	0	0	0	0	0	0	0	0	0	0	0	17
23:00	0	13	5	0	0	0	0	0	0	0	0	0	0	0	0	18
Total	0	399	157	2	18	0	0	3	0	0	0	0	0	0	6	585
Percent	0.0%	68.2%	26.8%	0.3%	3.1%	0.0%	0.0%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%	
AM Peak Vol.																
PM Peak Vol.		16:00 80	16:00 32	15:00 1	16:00 5			16:00 1							16:00 2	

CLASS
 RLC

City of Des Moines
 Traffic & Transportation Division
 Tube Traffic Count
 600 E. Court, Suite 200

Site Code:
 Station ID:
 e of SE 8th Street
 Latitude: 0' 0.000 Undefined

EB	Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
Fr.	04/10/09															
	01:00	0	7	1	0	0	0	0	0	0	0	0	0	0	0	8
	02:00	0	1	3	0	0	0	0	0	0	0	0	0	0	0	4
	03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	04:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
	05:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
	06:00	0	3	0	0	1	0	0	0	0	0	0	0	0	0	5
	07:00	1	7	2	0	0	0	0	0	0	0	0	0	0	0	13
	08:00	0	15	3	0	2	0	0	0	0	0	0	0	0	0	20
	09:00	0	18	14	1	2	0	0	0	0	0	0	0	0	0	40
	10:00	0	21	9	0	3	0	0	0	0	0	0	0	0	0	33
	11:00	0	40	17	0	3	0	0	0	0	0	0	0	0	0	60
	12 PM	0	42	25	0	3	0	0	0	0	0	0	0	0	0	72
	13:00	0	70	35	0	4	0	0	0	0	0	0	0	0	0	109
	14:00	1	53	23	0	5	0	0	0	0	0	0	0	0	0	8
	15:00	1	63	13	0	5	0	0	0	0	0	0	0	0	0	2
	16:00	0	61	34	1	2	0	0	1	0	0	0	0	0	0	99
	17:00	2	76	30	0	1	0	0	0	0	0	0	0	0	0	111
	18:00	1	71	18	0	1	0	0	0	0	0	0	0	0	0	90
	19:00	0	81	32	0	2	0	0	0	0	0	0	0	0	0	116
	20:00	0	66	24	0	2	0	0	0	0	0	0	0	0	0	93
	21:00	0	51	22	0	1	0	0	0	0	0	0	0	0	0	74
	22:00	0	48	11	0	0	0	0	0	0	0	0	0	0	0	60
	23:00	0	10	4	0	0	0	0	0	0	0	0	0	0	0	58
	Total	6	855	331	2	37	1	0	1	0	0	0	0	0	23	1256
	Percent	0.5%	68.1%	26.4%	0.2%	2.9%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	1.8%	
AM Peak	06:00	1	42	25	1	3	1								3	
PM Peak	16:00	2	81	35	1	5			15:00						8	

City of Des Moines
Traffic & Transportation Division
Tube Traffic Count
600 E. Court, Suite 200

Site Code:
Station ID:
Diehl Avenue
e of SE 8th Street
Latitude: 0' 0.000 Undefined

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multl	6 Axle Multl	>6 Axl Multl	Not Classed	Total
04/11/09	0	7	1	0	0	0	0	0	0	0	0	0	0	0	8
01:00	0	6	1	0	0	0	0	0	0	0	0	0	0	0	7
02:00	0	5	3	0	0	0	0	0	0	0	0	0	0	0	8
03:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
04:00	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
05:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
06:00	0	2	3	0	0	0	0	0	0	0	0	0	0	2	7
07:00	0	12	6	0	1	0	0	0	0	0	0	0	0	0	19
08:00	0	16	8	0	2	0	0	0	0	0	0	0	0	1	27
09:00	0	40	25	0	6	0	0	0	0	0	0	0	0	2	73
10:00	0	50	25	0	6	0	0	1	0	0	0	0	0	0	82
11:00	1	42	31	0	3	0	0	1	0	0	0	0	0	3	81
12 PM	0	78	29	1	6	0	0	0	0	0	0	0	0	3	117
13:00	2	68	29	0	8	0	0	0	0	0	0	0	0	5	112
14:00	0	52	31	0	3	0	0	0	0	0	0	0	0	1	87
15:00	2	75	26	0	1	0	0	0	0	0	0	0	0	5	109
16:00	0	85	25	0	1	0	0	0	0	0	0	0	0	1	112
17:00	2	69	27	0	0	0	0	0	0	0	0	0	0	0	98
18:00	1	63	20	0	0	0	0	0	0	0	0	0	0	3	77
19:00	0	62	21	0	0	0	0	0	0	0	0	0	0	0	83
20:00	1	43	17	0	0	0	0	1	0	0	0	0	0	0	62
21:00	0	35	6	0	1	0	0	0	0	0	0	0	0	0	42
22:00	0	30	7	0	0	0	0	0	0	0	0	0	0	1	38
23:00	0	13	4	0	0	0	0	0	0	0	0	0	0	0	17
Total	9	849	345	1	38	0	0	3	0	0	0	0	0	27	1272
Percent	0.7%	66.7%	27.1%	0.1%	3.0%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	2.1%	
AM Peak	11:00	10:00	11:00		09:00			10:00						11:00	
Vol.	1	50	31		6			1						3	
PM Peak	13:00	16:00	14:00	12:00	13:00			20:00						13:00	
Vol.	2	85	31	1	8			1						5	

[illegible]

City of Des Moines
Traffic & Transportation Division
Tribune Traffic Count
600 E. Court, Suite 200

Site Code:
Station ID:
Diehl Avenue
e of SE 8th Street
Latitude: 0' 0.000 Undefined

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
Mon. 04/13/09	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
01:00	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
02:00	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
03:00	0	2	1	0	0	0	0	0	0	0	0	0	0	0	3
04:00	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
05:00	0	1	1	0	1	0	0	0	0	0	0	0	0	0	3
06:00	0	7	4	0	1	0	0	0	0	0	0	0	0	0	15
07:00	0	22	12	0	1	0	0	0	0	0	0	0	0	0	35
08:00	0	15	8	1	3	0	0	1	0	0	0	0	0	0	28
09:00	0	16	13	0	0	0	0	0	0	0	0	0	0	0	31
10:00	0	24	20	0	5	0	0	0	0	0	0	0	0	0	49
11:00	0	29	13	0	2	1	0	0	0	0	0	0	0	0	1
12 PM	0	41	9	0	3	1	0	0	0	0	0	0	0	0	59
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	0	168	82	1	16	2	0	1	0	0	0	0	0	11	281
Percent	0.0%	59.8%	29.2%	0.4%	5.7%	0.7%	0.0%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	3.9%	
AM Peak		11:00	10:00	08:00	10:00	11:00		08:00						06:00	
Vol.		29	20	1	5	1		1						3	
PM Peak		12:00	12:00		12:00	12:00								12:00	
Vol.		41	9		3	1								5	
Grand Total	17	2835	1089	6	130	3	0	9	0	0	0	0	0	94	4183
Percent	0.4%	67.8%	26.0%	0.1%	3.1%	0.1%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	2.2%	

City of Des Moines
 Traffic & Transportation Division
 Tube Traffic Count
 600 E. Court, Suite 200

Site Code:
 Station ID:

Diehl Avenue
 e of SE 8th Street
 Latitude: 0' 0.000 Undefined

WB	Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Classed	Not	Total
Thu	04/09/09	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	15:00	0	52	24	1	1	0	0	0	0	0	0	0	0	0	0	78
	16:00	0	54	20	1	2	0	0	0	0	0	0	0	0	0	1	78
	17:00	0	56	26	0	2	0	0	0	0	0	0	0	0	0	0	84
	18:00	0	62	8	0	2	0	0	0	0	0	0	0	0	0	1	73
	19:00	0	28	12	0	1	0	0	1	0	0	0	1	0	0	6	49
	20:00	0	27	8	0	1	0	0	0	0	0	0	0	0	0	0	36
	21:00	0	11	4	0	0	0	0	0	0	0	0	0	0	0	1	16
	22:00	0	9	2	0	0	0	0	0	0	0	0	0	0	0	0	11
	23:00	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5
	Total	0	304	104	2	9	0	0	1	0	0	0	1	0	0	9	430
	Percent	0.0%	70.7%	24.2%	0.5%	2.1%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	2.1%	
AM Peak																	
Vol.																	
PM Peak																	
Vol.																	
			18:00	17:00	15:00	16:00			19:00				19:00			19:00	
			62	26	1	2			1				1			6	

WB	Start	Bikes	Cars & Trailers	2 Axle		Buses	2 Axle		3 Axle		4 Axle		5 Axle		6 Axle		7 Axle		Classed	Total
	Time			Long	6 Tire		Single	Single	Double	Double	Double	Multi	Multi	Multi						
T1	04/10/09	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	01:00	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
	02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
	03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	04:00	0	5	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
	05:00	0	5	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
	06:00	0	18	0	12	0	0	3	0	0	0	0	0	0	0	0	0	0	0	36
	07:00	0	39	0	17	0	0	4	0	0	0	0	0	0	0	0	0	0	0	60
	08:00	1	31	0	13	0	0	3	1	0	0	0	0	0	0	0	0	0	0	54
	09:00	0	40	0	11	0	0	5	0	0	0	0	0	0	0	0	0	0	0	57
	10:00	0	43	0	21	0	0	2	0	0	0	0	0	0	0	0	0	0	0	66
	11:00	0	41	0	29	1	0	1	0	0	0	0	0	0	0	0	0	0	0	73
	12 PM	0	62	0	35	0	0	7	0	0	0	0	0	0	0	0	0	0	0	1
	13:00	0	59	0	23	0	0	1	0	0	0	0	0	0	0	0	0	0	0	6
	14:00	0	54	0	24	0	0	2	0	0	0	0	0	0	0	0	0	0	0	89
	15:00	1	55	0	28	0	0	6	0	0	0	0	0	0	0	0	0	0	0	3
	16:00	0	73	0	30	1	0	2	0	1	0	0	0	0	0	0	0	0	0	93
	17:00	2	80	0	32	0	0	1	0	0	0	0	0	0	0	0	0	0	0	109
	18:00	0	73	0	30	0	0	4	0	0	0	0	0	0	0	0	0	0	0	115
	19:00	0	39	0	12	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2
	20:00	0	36	0	7	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1
	21:00	0	24	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	46
	22:00	0	15	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34
23:00	0	4	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	
Total	5	801	351	2	44	3	0	0	0	0	0	0	0	0	0	0	0	0	33	1239
Percent	0.4%	64.6%	28.3%	0.2%	3.6%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.7%	
AM Peak	08:00	10:00	11:00	11:00	09:00	08:00													08:00	5
Vol.	1	43	29	1	5	1														
PM Peak	17:00	17:00	12:00	16:00	12:00	14:00													13:00	6
Vol.	2	80	35	1	7	1														

City of Des Moines
Traffic & Transportation Division
Tube Traffic Count
600 E. Court, Suite 200

Site Code:
Station ID:
e of SE 8th Street
Diehl Avenue
Latitude: 0' 0.000 Undefined

WB	Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Classed	Not	Total
	04/11/09	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	9
	01:00	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	4
	02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	03:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
	04:00	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	5
	05:00	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	4
	06:00	0	7	6	0	0	0	0	0	0	0	0	0	0	0	0	17
	07:00	0	19	7	0	0	0	0	0	0	0	0	0	0	0	0	26
	08:00	0	34	26	0	1	0	0	0	0	0	0	0	0	0	0	61
	09:00	0	59	12	0	1	0	0	0	0	0	0	0	0	0	0	72
	10:00	0	60	36	0	4	0	0	0	0	0	0	0	0	0	2	102
	11:00	1	61	22	0	3	0	0	0	0	0	0	0	0	0	6	93
	12 PM	1	55	21	0	13	0	0	0	0	0	0	0	0	0	5	95
	13:00	1	81	20	0	5	0	0	1	0	0	0	0	0	0	2	110
	14:00	1	62	32	0	6	0	0	0	0	0	0	0	0	0	6	107
	15:00	1	58	26	0	1	0	0	0	0	0	0	0	0	0	8	94
	16:00	1	67	18	0	1	0	0	0	0	0	0	0	0	0	4	91
	17:00	2	63	26	0	5	0	0	0	0	0	0	0	0	0	1	97
	18:00	0	58	27	0	1	0	0	0	0	0	0	0	0	0	1	87
	19:00	1	34	18	0	1	0	0	0	0	0	0	0	0	0	0	54
	20:00	0	29	9	0	1	0	0	0	0	0	0	0	0	0	0	39
	21:00	0	17	9	0	0	0	0	0	0	0	0	0	0	0	1	27
	22:00	0	14	4	0	0	0	0	0	0	0	0	0	0	0	0	18
	23:00	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5
	Total	9	805	322	0	43	0	0	1	0	0	0	0	0	0	40	1220
	Percent	0.7%	66.0%	26.4%	0.0%	3.5%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	3.3%		
	AM Peak	11:00	11:00	10:00		10:00											6
	Vol.	1	61	36		4											11:00
	PM Peak	17:00	13:00	14:00		12:00			13:00								8
	Vol.	2	81	32		13			1								15:00

501.

→

→

WB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multir	6 Axle Multir	>6 Axl Multir	Classed	Not	Total
04/13/09	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	4
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
04:00	0	8	4	0	0	0	0	0	0	0	0	0	0	0	0	12
05:00	0	5	6	0	0	0	0	0	0	0	0	0	0	0	0	11
06:00	0	14	12	0	4	0	0	0	0	0	0	0	0	2	2	32
07:00	0	37	12	0	0	0	0	1	0	0	0	0	0	0	0	50
08:00	0	27	12	0	0	0	0	0	0	0	0	0	0	0	0	42
09:00	0	28	14	0	2	1	0	0	0	0	0	0	0	3	1	48
10:00	0	34	16	0	1	0	0	0	0	0	0	0	0	4	1	52
11:00	1	36	12	1	1	0	0	0	0	0	0	0	0	55	5	55
12 PM	0	31	21	0	1	0	0	0	0	0	0	0	0	2	2	55
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	1	224	112	1	12	1	0	1	0	0	0	0	0	12	12	364
Percent	0.3%	61.5%	30.8%	0.3%	3.3%	0.3%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	3.3%	3.3%	
AM Peak Vol.	1	37	16	1	4	1								4		
PM Peak Vol.		12:00 31	12:00 21		12:00 1			07:00 1						12:00 2		
Grand Total Percent	18 0.4%	2682 66.7%	1058 26.3%	5 0.1%	132 3.3%	4 0.1%	0 0.0%	3 0.1%	0 0.0%	0 0.0%	0 0.0%	1 0.0%	0 0.0%	119 3.0%	119 3.0%	4022

Site Code:
Station ID:

Latitude: 0' 0.000 Undefined

[illegible]

Latitude: 0' 0.000 Undefined

B																											Ladder: 3:00:00			
Start Time	1	15	16	20	21	25	26	30	31	35	36	40	41	45	46	50	51	55	60	61	66	70	71	76	999	Total	Pace	Number		
04/10/09	0	0	0	0	4	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	20:29	In Pace	8	
01:00	0	0	0	0	2	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	21:30	*	3	
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17:26	*	1
03:00	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	16:25	*	2	
04:00	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	15:24		6	
05:00	0	0	2	2	1	4	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	23:32		14	
06:00	5	5	2	2	3	4	1	1	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	17:26		22	
07:00	3	2	2	3	16	6	9	6	3	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	21:30		24	
08:00	9	4	5	4	13	11	11	4	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	33	21:30		51	
09:00	4	1	3	3	28	23	23	8	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	60	21:30		72	
10:00	6	5	5	9	29	23	38	10	8	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	109	21:30		88	
11:00	1	1	9	8	50	38	25	7	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90	21:30		90	
12 PM	12	12	14	8	31	30	34	28	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	84	21:30		64	
13:00	1	1	14	7	50	28	34	6	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	99	21:30		78	
14:00	5	1	21	10	45	56	24	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	111	20:29		81	
15:00	1	1	14	8	30	34	28	6	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90	21:30		75	
16:00	5	5	21	10	45	56	24	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	116	17:26		81	
17:00	1	1	10	25	35	26	27	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	74	18:27		62	
18:00	3	3	24	35	27	26	27	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	93	21:30		56	
19:00	6	1	12	34	22	19	19	5	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	60	21:30		42	
20:00	1	0	7	23	22	22	7	7	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	58	21:30		44	
21:00	3	0	6	22	4	6	3	3	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	14	22:31		11	
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	65	173	535	382	91	7	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1266				
Percent	5.2%	13.8%	42.6%	30.4%	7.2%	0.6%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	11:00					
AM Peak	08:00	08:00	11:00	10:00	11:00	08:00	11:00																			72				
Vol.	9	5	29	23	8	1	1																			116				
PM Peak	13:00	18:00	16:00	12:00	12:00	14:00	12:00	23:00																		18:00				
Vol.	12	25	56	38	10	2	1	1																		116				

[illegible]

Tube Traffic Count
600 E. Court, Suite 200

Latitude: 0' 0.000 Undefined

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[illegible]

City of Des Moines

Traffic & Transportation Division
Tube Traffic Count
600 E. Court, Suite 200

Site Code:
Station ID:

Diehl Avenue
e of SE 8th Street

Latitude: 0' 0.000 Undefined

EB		Latitude: 0 0:00																								Circumference						
Start Time	1	15	16	20	21	25	26	30	31	35	36	40	41	45	46	50	51	55	56	60	61	65	70	71	75	76	999	Total	Pace	Number		
04/13/09	0	0	0	0	2	2	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4	17-26	3		
01:00	0	0	0	0	1	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	17-26	2		
02:00	0	0	0	0	1	1	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	18-27	3		
03:00	0	0	0	0	2	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	13-22	2		
04:00	1	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	13-22	2		
05:00	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	19-28	3		
06:00	5	0	4	2	2	2	3	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	16-25	6		
07:00	1	1	3	3	20	13	8	8	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35	19-28	28		
08:00	1	2	4	11	13	11	11	11	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	21-30	24		
09:00	4	4	4	11	22	11	8	14	3	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31	19-28	19		
10:00	2	7	7	7	22	12	14	17	3	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49	20-29	36		
11:00	7	7	7	7	12	12	17	17	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	46	21-30	29		
12 PM	7	7	3	3	22	22	18	18	8	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	59	21-30	40		
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
Total	28	30	110	86	24	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	281				
Percent	10.0%	10.7%	39.1%	30.6%	8.5%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	10.00				
AM Peak	11:00	10:00	10:00	11:00	09:00	10:00																						49				
Vol.	7	7	22	17	4	1																							12:00			
PM Peak	12:00	12:00	12:00	12:00	12:00	12:00																							59			
Vol.	7	3	22	18	8	1																								4183		
Total	240	574	1743	1269	308	38	9	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Percent	5.7%	13.7%	41.7%	30.3%	7.4%	0.9%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%				

15th Percentile : 19 MPH
50th Percentile : 24 MPH
85th Percentile : 29 MPH
95th Percentile : 33 MPH

Stats
10 MPH Pace Speed : 21-30 MPH
Number in Pace : 3012
Percent in Pace : 72.0%
Number of Vehicles > 25 MPH : 1626
Percent of Vehicles > 25 MPH : 38.9%
Mean Speed(Average) : 24 MPH

Tube Traffic Count
600 E. Court, Suite 200

Latitude: 0' 0.000 Undefined

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[illegible]

City of Des Moines
Traffic & Transportation Division
Tube Traffic Count
600 E. Court, Suite 200

Site Code:
Station ID:
Diehl Avenue
e of SE 8th Street

Latitude: 0° 0.000 Undefined

WB		Latitude: 0 0.000																								Uplinkline	
Start Time		1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	Pace	Number									
04/10/09	15	20	25	30	35	40	45	50	55	60	65	70	75	999		1	7-16	1									
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	19-28	3								
02:00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2	17-26	2								
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*								
04:00	0	1	1	6	1	0	0	0	0	0	0	0	0	0	0	0	9	22-31	8								
05:00	3	3	2	2	1	0	0	0	0	0	0	0	0	0	0	0	8	16-25	5								
06:00	3	4	9	13	6	1	0	0	0	0	0	0	0	0	0	0	36	22-31	23								
07:00	2	3	10	29	12	4	0	0	0	0	0	0	0	0	0	0	60	23-32	41								
08:00	10	2	14	17	9	2	0	0	0	0	0	0	0	0	0	0	54	21-30	31								
09:00	2	3	20	22	10	0	0	0	0	0	0	0	0	0	0	0	57	21-30	42								
10:00	4	8	23	23	7	1	0	0	0	0	0	0	0	0	0	0	66	21-30	46								
11:00	2	2	25	24	16	3	1	0	0	0	0	0	0	0	0	0	73	21-30	49								
12 PM	3	6	32	51	13	0	0	0	0	0	0	0	0	0	0	0	105	21-30	83								
13:00	11	6	28	31	11	1	1	0	0	0	0	0	0	0	0	0	89	21-30	59								
14:00	7	4	21	36	16	0	0	0	0	0	0	0	0	0	0	0	84	21-30	57								
15:00	4	7	21	47	14	0	0	0	0	0	0	0	0	0	0	0	93	21-30	68								
16:00	4	17	29	44	14	1	0	0	0	0	0	0	0	0	0	0	109	21-30	73								
17:00	4	6	42	46	13	4	0	0	0	0	0	0	0	0	0	0	115	21-30	88								
18:00	4	15	40	42	8	0	0	0	0	0	0	0	0	0	0	0	109	21-30	82								
19:00	2	6	17	26	1	1	0	0	0	0	0	0	0	0	0	0	53	21-30	43								
20:00	1	5	16	20	4	0	0	0	0	0	0	0	0	0	0	0	46	21-30	36								
21:00	4	3	11	10	5	0	1	0	0	0	0	0	0	0	0	0	34	21-30	21								
22:00	3	3	7	9	1	1	0	0	0	0	0	0	0	0	0	0	24	20-29	16								
23:00	0	1	2	5	1	0	0	0	0	0	0	0	0	0	0	0	9	22-31	8								
Total	70	106	371	507	163	19	3	0	0	0	0	0	0	0	0	0	1239										
Percent	5.6%	8.6%	29.9%	40.9%	13.2%	1.5%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%											
AM Peak	08:00	10:00	11:00	07:00	11:00	07:00	11:00										73	11:00									
Vol.	10	8	25	29	16	4	1										115	17:00									
PM Peak	13:00	16:00	17:00	12:00	14:00	17:00	13:00										115										
Vol.	11	17	42	51	16	4	1																				

3

WB	Start Time	1	15	16	20	21	25	26	30	31	35	36	40	41	45	46	50	51	55	56	60	61	65	70	71	75	76	999	Total	Pace Speed	Number in Pace
	04/11/09	0	0	1	1	2	3	3	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	24-33	8
	01:00	0	0	0	0	1	1	2	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	22-31	4
	02:00	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	12-21	1	
	03:00	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	17-26	1	
	04:00	0	0	1	0	0	4	4	4	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	20-29	4	
	05:00	0	0	0	0	0	2	2	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	26-35	3	
	06:00	5	3	3	3	4	3	3	3	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	18-27	9	
	07:00	0	0	3	3	6	13	13	19	3	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	26	21-30	19	
	08:00	0	0	6	6	27	27	27	27	7	7	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	61	21-30	46	
	09:00	1	8	8	8	22	22	27	27	13	13	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	72	21-30	49	
	10:00	6	4	4	4	23	23	48	48	19	19	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	102	21-30	71	
	11:00	11	2	2	2	21	21	40	40	17	17	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	93	21-30	61	
	12 PM	7	3	3	3	26	26	46	46	10	10	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	95	21-30	72	
	13:00	5	4	4	4	37	37	52	52	15	15	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	110	21-30	89	
	14:00	7	6	6	6	38	38	39	39	11	11	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	107	21-30	77	
	15:00	10	8	8	8	28	28	36	36	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	94	21-30	64	
	16:00	8	7	7	7	39	39	30	30	11	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	91	21-30	69	
	17:00	3	10	10	10	42	42	33	33	8	8	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	97	21-30	75	
	18:00	9	5	5	5	37	37	29	29	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	87	21-30	66	
	19:00	3	6	6	6	21	21	18	18	4	4	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54	21-30	39	
	20:00	0	2	2	2	18	18	16	16	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29	21-30	34	
	21:00	1	1	1	1	9	9	14	14	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27	21-30	23	
	22:00	1	3	3	3	4	4	8	8	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	22-31	13	
	23:00	0	0	0	0	2	2	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	24-33	3	
	Total	77	83	408	483	148	19	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1220			
	Percent	6.3%	6.8%	33.4%	39.6%	12.1%	1.6%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	10.00			
	AM Peak	11:00	09:00	08:00	10:00	10:00	08:00	07:00																				102			
	Vol.	11	8	27	48	19	2	1																				110			
	PM Peak	15:00	17:00	17:00	13:00	14:00	12:00	12:00																				110			
	Vol.	10	10	42	52	15	2	1																				110			

Traffic & Transportation Division
Tube Traffic Count
600 E. Court, Suite 200

Site Code:
Station ID:
Diehl Avenue

Latitude: 0' 0.000 Undefined

[illegible]

City of Des Moines

Traffic & Transportation Division
Tube Traffic Count
600 E. Court, Suite 200

Site Code:
Station ID:
Diehl Avenue
e of SE 8th Street
Latitude: 0' 0.000 Undefined

WB	Start	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	Pace	Number
	Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999		Speed	In Pace
	04/13/09	0	0	2	1	0	0	0	0	0	0	0	0	0	0	4	21-30	3
	01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7-16	1
	02:00	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2	17-26	1
	03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	23-32	10
	04:00	0	1	3	5	2	1	0	0	0	0	0	0	0	0	11	25-34	7
	05:00	0	1	1	5	2	2	0	0	0	0	0	0	0	0	32	21-30	26
	06:00	3	0	13	13	3	0	0	0	0	0	0	0	0	0	50	21-30	36
	07:00	0	4	18	18	7	3	0	0	0	0	0	0	0	0	42	21-30	28
	08:00	0	5	10	18	9	0	0	0	0	0	0	0	0	0	48	21-30	30
	09:00	5	0	17	13	13	0	0	0	0	0	0	0	0	0	52	21-30	39
	10:00	3	3	21	18	7	0	0	0	0	0	0	0	0	0	55	21-30	38
	11:00	6	4	21	17	6	1	0	0	0	0	0	0	0	0	55	21-30	37
	12 PM	2	8	20	17	7	1	0	0	0	0	0	0	0	0	*	*	*
	13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	Total	19	27	126	127	57	8	0	0	0	0	0	0	0	0	364		
	Percent	5.2%	7.4%	34.6%	34.9%	15.7%	2.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
	AM Peak	11:00	08:00	10:00	07:00	09:00	07:00									11:00		
	Vol.	6	5	21	18	13	3									55		
	PM Peak	12:00	12:00	12:00	12:00	12:00	12:00									12:00		
	Vol.	2	8	20	17	7	1									55		
	Percent	5.9%	8.6%	32.5%	39.0%	12.2%	1.6%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4022		
	15th Percentile :																	
	50th Percentile :																	
	85th Percentile :																	
	95th Percentile :																	

Stats

10 MPH Pace Speed : 21-30 MPH
Number in Pace : 2876
Percent in Pace : 71.5%
Number of Vehicles > 25 MPH : 2131
Percent of Vehicles > 25 MPH : 53.0%
Mean Speed(Average) : 25 MPH

City of Des Moines
 Traffic & Transportation Division
 Tube Traffic Count
 600 E. Court, Suite 200

SAVED
SUNRAY

Site Code:
 Station ID:
 Diehl Avenue
 e of SE 8th Street
 Latitude: 0' 0.000 Undefined

B		Latitude: 0 0.000																								Ordering		
Start Time	1	15	16	20	21	25	26	30	31	35	36	40	41	45	50	51	55	60	61	65	70	71	75	76	999	Total	Pace	Number
04/12/09	0	0	0	5	5	4	4	1	1	0	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	11	20:29	9
01:00	0	0	0	5	5	5	5	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	21:30	10
02:00	0	0	0	3	3	2	2	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	18:27	5
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
04:00	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	18:27	2	
05:00	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	17:26	1	
06:00	5	2	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	*	5	
07:00	3	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	*	3	
08:00	1	1	1	8	14	5	5	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	20:29	19	
09:00	3	3	8	24	14	13	13	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	52	19:28	37	
10:00	1	1	13	16	13	13	18	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	48	18:27	31	
11:00	3	11	11	33	18	5	18	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70	20:29	51	
12 PM	11	13	13	37	18	3	18	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	82	19:28	55	
13:00	12	18	18	20	12	12	12	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	62	16:25	38	
14:00	8	11	11	23	11	11	18	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	55	17:26	35	
15:00	14	15	15	14	14	18	18	2	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	64	19:28	32	
16:00	5	8	8	34	13	3	13	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	63	19:28	47	
17:00	3	2	2	16	11	11	11	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35	21:30	27	
18:00	3	7	7	24	18	2	18	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54	21:30	42	
19:00	4	8	8	21	11	11	15	2	2	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	49	18:27	32	
20:00	1	4	4	24	15	15	4	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	47	21:30	39	
21:00	4	4	4	10	6	4	4	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17:26	15	
22:00	0	0	0	6	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	19:28	9	
23:00	0	1	1	4	4	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	17:26	6	
Total	81	126	335	198	41	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	789		
Percent	10.3%	16.0%	42.5%	25.1%	5.2%	0.8%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	11:00		
AM Peak	06:00	10:00	11:00	11:00	10:00	01:00	00:00																			70		
Vol.	5	13	33	18	5	2	1																			12:00		
PM Peak	15:00	13:00	12:00	12:00	12:00	19:00	19:00																			82		
Vol.	14	18	37	18	3	2	1																			789		
Total	81	126	335	198	41	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	789		
Percent	10.3%	16.0%	42.5%	25.1%	5.2%	0.8%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	11:00		

Stats
 10 MPH Pace Speed : 21-30 MPH
 Number in Pace : 533
 Percent in Pace : 67.6%
 Number of Vehicles > 25 MPH : 247
 Percent of Vehicles > 25 MPH : 31.3%
 Mean Speed(Average) : 23 MPH

15th Percentile : 17 MPH
 50th Percentile : 23 MPH
 85th Percentile : 29 MPH
 95th Percentile : 32 MPH

City of Des Moines

Traffic & Transportation Division
Tube Traffic Count
600 E. Court, Suite 200

Site Code:
Station ID:
Diehl Avenue
e of SE 8th Street
Latitude: 0' 0.000 Undefined

WB	Start	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	Pace	Number
Time	15	20	25	30	35	40	45	50	55	60	65	70	75	79	999		Speed	In Pace
04/12/09	1	1	5	1	1	0	1	0	0	0	0	0	0	0	0	10	15-24	6
01:00	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2	17-26	2
02:00	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	4	18-27	4
03:00	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	23-32	2
04:00	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	27-36	1
05:00	0	1	1	6	0	0	0	0	0	0	0	0	0	0	0	8	20-29	7
06:00	2	0	3	3	3	0	0	0	0	0	0	0	0	0	0	11	23-32	8
07:00	0	0	4	11	10	0	0	0	0	0	0	0	0	0	0	15	21-30	15
08:00	0	1	13	19	10	1	0	0	0	0	0	0	0	0	0	44	21-30	32
09:00	3	7	18	18	6	1	0	0	0	0	0	0	0	0	0	53	21-30	36
10:00	2	2	12	22	7	3	0	0	0	0	0	0	0	0	0	48	21-30	34
11:00	0	1	21	27	12	1	0	0	0	0	0	0	0	0	0	62	21-30	48
12 PM	5	8	24	36	5	1	0	0	0	0	0	0	0	0	0	79	21-30	60
13:00	7	11	23	17	4	0	1	0	0	0	0	0	0	0	0	63	20-29	40
14:00	8	16	20	20	1	0	0	0	0	0	0	0	0	0	0	65	20-29	40
15:00	4	12	16	24	6	1	0	0	0	0	0	0	0	0	0	63	21-30	40
16:00	4	5	24	11	4	0	0	0	0	0	0	0	0	0	0	48	21-30	35
17:00	4	2	25	24	6	1	0	0	0	0	0	0	0	0	0	62	21-30	49
18:00	2	9	18	13	3	0	0	0	0	0	0	0	0	0	0	45	19-28	31
19:00	2	3	14	15	2	0	0	0	0	0	0	0	0	0	0	36	21-30	29
20:00	1	5	3	5	2	1	0	0	0	0	0	0	0	0	0	17	23-32	10
21:00	2	1	3	8	1	0	0	0	0	0	0	0	0	0	0	15	22-31	12
22:00	0	1	6	4	2	0	0	0	0	0	0	0	0	0	0	13	20-29	11
23:00	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	3	22-31	3
Total	47	86	256	289	78	11	2	0	0	0	0	0	0	0	0	769		
Percent	6.1%	11.2%	33.3%	37.6%	10.1%	1.4%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	09:00	09:00	11:00	11:00	11:00	10:00	00:00									11:00		
Vol.	3	7	21	27	12	3	1									62		
PM Peak	14:00	14:00	17:00	12:00	15:00	12:00	13:00									12:00		
Vol.	8	16	25	36	6	1	1									79		
Total	47	86	256	289	78	11	2	0	0	0	0	0	0	0	0	769		
Percent	6.1%	11.2%	33.3%	37.6%	10.1%	1.4%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile : 19 MPH
50th Percentile : 25 MPH
85th Percentile : 30 MPH
95th Percentile : 34 MPH

Stats
10 MPH Pace Speed : 21-30 MPH
Number in Pace : 545
Percent in Pace : 70.9%
Number of Vehicles > 25 MPH : 380
Percent of Vehicles > 25 MPH : 49.4%
Mean Speed(Average) : 25 MPH

City of Des Moines

Traffic & Transportation Division
Tube Traffic Count
600 E. Court, Suite 200

Site Code:
Station ID:
w of SE 14th Street
Latitude: 0' 0.000 Undefined

Start Time	06-Apr-09	06-Apr-09	Tue	Tue	Wed	Wed	Thu	Thu	Fri	Fri	Sat	Sat	Sun	Sun	Week Average	Week Average
WB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB
12:00 AM	*	*	*	*	*	*	*	*	7	1	8	15	13	10	9	9
01:00 AM	*	*	*	*	*	*	*	*	4	2	4	5	12	4	7	4
02:00 AM	*	*	*	*	*	*	*	*	0	2	5	2	6	4	4	3
03:00 AM	*	*	*	*	*	*	*	*	1	2	2	1	1	3	1	2
04:00 AM	*	*	*	*	*	*	*	*	5	6	4	6	3	1	4	4
05:00 AM	*	*	*	*	*	*	*	*	8	7	2	4	2	9	4	7
06:00 AM	*	*	*	*	*	*	*	*	14	32	9	14	4	11	9	19
07:00 AM	*	*	*	*	*	*	*	*	23	56	13	28	4	19	13	34
08:00 AM	*	*	*	*	*	*	*	*	42	56	25	60	22	39	30	52
09:00 AM	*	*	*	*	*	*	*	*	35	86	69	103	50	51	51	80
10:00 AM	*	*	*	*	*	*	*	*	62	118	67	140	41	79	57	112
11:00 AM	*	*	*	*	*	*	*	*	73	130	72	143	62	86	69	120
12:00 PM	*	*	*	*	*	*	*	*	99	151	94	155	67	118	87	141
01:00 PM	*	*	*	*	*	*	*	*	80	145	96	182	53	99	76	142
02:00 PM	*	*	*	*	*	*	*	*	74	127	76	161	47	96	66	128
03:00 PM	*	*	*	*	*	*	*	*	78	125	87	147	57	95	74	116
04:00 PM	*	*	*	*	*	*	*	*	98	124	88	132	54	70	80	114
05:00 PM	*	*	*	*	*	*	*	*	81	107	93	133	44	71	74	110
06:00 PM	*	*	*	*	*	*	*	*	84	81	119	109	48	72	81	95
07:00 PM	*	*	*	*	*	*	*	*	57	67	77	86	37	44	64	73
08:00 PM	*	*	*	*	*	*	*	*	48	50	73	90	22	35	47	64
09:00 PM	*	*	*	*	*	*	*	*	30	45	43	63	15	17	30	52
10:00 PM	*	*	*	*	*	*	*	*	13	23	30	33	9	13	20	29
11:00 PM	*	*	*	*	*	*	*	*	11	6	16	5	8	2	13	6
Lane Day	0	0	0	0	0	0	498	599	1153	1744	1066	1812	681	1048	970	1516
AM Peak Vol.							1097		2897		2878		1729		2486	
PM Peak Vol.							16:00	16:00	18:00	12:00	13:00	13:00	12:00	12:00	12:00	13:00
							98	124	119	151	96	182	67	118	87	142

Volume
Acc

City of Des Moines
 Traffic & Transportation Division
 Tube Traffic Count
 600 E. Court, Suite 200

Page 2
 Site Code:
 Station ID:
 w of SE 14th Street
 Latitude: 0' 0.000 Undefined

Start Time	13-Apr-09	WB	EB	Tue	WB	EB	Wed	WB	EB	Thu	WB	EB	Fri	WB	EB	Sat	WB	EB	Sun	WB	EB	Week Average	WB	EB
12:00 AM	4		4	*		*	*		*	*		*	*		*	*	*		*	*		4		4
01:00 AM	2		0	*		*	*		*	*		*	*		*	*	*		*	*		2		0
02:00 AM	3		2	*		*	*		*	*		*	*		*	*	*		*	*		3		2
03:00 AM	3		3	*		*	*		*	*		*	*		*	*	*		*	*		3		3
04:00 AM	4		7	*		*	*		*	*		*	*		*	*	*		*	*		4		7
05:00 AM	6		9	*		*	*		*	*		*	*		*	*	*		*	*		6		9
06:00 AM	16		30	*		*	*		*	*		*	*		*	*	*		*	*		16		30
07:00 AM	42		46	*		*	*		*	*		*	*		*	*	*		*	*		42		46
08:00 AM	25		50	*		*	*		*	*		*	*		*	*	*		*	*		25		50
09:00 AM	25		68	*		*	*		*	*		*	*		*	*	*		*	*		25		68
10:00 AM	47		72	*		*	*		*	*		*	*		*	*	*		*	*		47		72
11:00 AM	49		101	*		*	*		*	*		*	*		*	*	*		*	*		49		101
12:00 PM	50		80	*		*	*		*	*		*	*		*	*	*		*	*		50		80
01:00 PM	*		*	*		*	*		*	*		*	*		*	*	*		*	*		*		*
02:00 PM	*		*	*		*	*		*	*		*	*		*	*	*		*	*		*		*
03:00 PM	*		*	*		*	*		*	*		*	*		*	*	*		*	*		*		*
04:00 PM	*		*	*		*	*		*	*		*	*		*	*	*		*	*		*		*
05:00 PM	*		*	*		*	*		*	*		*	*		*	*	*		*	*		*		*
06:00 PM	*		*	*		*	*		*	*		*	*		*	*	*		*	*		*		*
07:00 PM	*		*	*		*	*		*	*		*	*		*	*	*		*	*		*		*
08:00 PM	*		*	*		*	*		*	*		*	*		*	*	*		*	*		*		*
09:00 PM	*		*	*		*	*		*	*		*	*		*	*	*		*	*		*		*
10:00 PM	*		*	*		*	*		*	*		*	*		*	*	*		*	*		*		*
11:00 PM	*		*	*		*	*		*	*		*	*		*	*	*		*	*		*		*
Lane Day	276	748	472	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	276	748	472
AM Peak Vol.	49	11:00	101																			49	11:00	101
PM Peak Vol.	50	12:00	80																			50	12:00	80

Comb. Total	748	0	0	1097	2897	2878	1729	3234
ADT	ADT 2,501	ADT 2,501	ADT 2,501					

LC455
ALL

City of Des Moines
Traffic & Transportation Division
Tube Traffic Count
600 E. Court, Suite 200

Site Code:
Station ID:
Diehl Avenue
w of SE 14th Street
Latitude: 0' 0.000 Undefined

WB		Latitude: 0° 0.000 Undermine															
Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Classed	Not	Total	
04/09/09																	
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
15:00	0	65	10	1	0	0	0	0	0	0	0	0	0	0	0	76	
16:00	0	83	9	1	0	0	0	0	0	0	0	0	0	0	5	98	
17:00	1	69	9	0	0	0	0	0	0	0	0	0	0	0	2	81	
18:00	1	62	11	0	1	0	0	1	1	0	0	0	0	0	7	84	
19:00	0	49	8	0	0	0	0	0	0	0	0	0	0	0	0	57	
20:00	0	41	7	0	0	0	0	0	0	0	0	0	0	0	0	48	
21:00	0	27	3	0	0	0	0	0	0	0	0	0	0	0	0	30	
22:00	0	12	1	0	0	0	0	0	0	0	0	0	0	0	0	13	
23:00	0	10	1	0	0	0	0	0	0	0	0	0	0	0	0	11	
Total	2	418	59	2	1	0	0	1	1	0	0	0	0	0	14	498	
Percent	0.4%	83.9%	11.8%	0.4%	0.2%	0.0%	0.0%	0.2%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	2.8%		
AM Peak																	
Vol.																	
PM Peak	17:00	16:00	18:00	15:00	18:00			18:00	18:00						18:00		
Vol.	1	83	11	1	1			1	1						7		

[illegible]

Latitude: 0' 0.000 Undefined

[illegible]

Latitude: 0' 0.000 Undefined

[illegible]

Page 5
Site Code:
Station ID:

[illegible]

Latitude: 0' 0.000 Undefined

[illegible]

City of Des Moines
 Traffic & Transportation Division
 Tube Traffic Count
 600 E. Court, Suite 200

Site Code:
 Station ID:

Diehl Avenue
 w of SE 14th Street

Latitude: 0' 0.000 Undefined

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Classed	Not	Total
04/10/09	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
01:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2
04:00	0	4	2	0	0	0	0	0	0	0	0	0	0	0	0	6
05:00	0	5	2	0	0	0	0	0	0	0	0	0	0	0	0	7
06:00	1	18	11	0	0	0	0	0	0	0	0	0	0	2	2	32
07:00	1	34	11	1	1	1	1	0	0	0	0	0	0	7	7	56
08:00	0	37	10	0	3	1	1	0	0	0	0	0	0	5	5	56
09:00	1	54	17	1	1	0	0	0	0	0	0	0	0	12	12	86
10:00	1	84	21	0	1	0	0	0	0	0	0	0	0	11	11	118
11:00	0	93	30	0	1	0	0	0	0	0	0	0	0	6	6	130
12 PM	1	100	40	0	0	0	0	0	0	0	0	0	0	10	10	151
13:00	0	107	14	0	2	1	0	0	0	0	0	0	0	21	21	145
14:00	3	85	21	0	1	2	0	0	0	0	0	0	0	16	16	127
15:00	0	92	24	0	1	0	0	0	0	0	0	0	0	8	8	125
16:00	0	96	19	0	2	0	0	0	0	0	0	0	0	11	11	130
17:00	0	99	14	0	0	0	1	0	0	0	0	0	0	18	18	133
18:00	2	88	16	0	0	0	0	0	0	0	0	0	0	13	13	119
19:00	0	76	13	0	1	0	0	0	0	0	0	0	0	5	5	95
20:00	1	63	11	0	0	0	0	0	0	0	0	0	0	5	5	80
21:00	0	59	18	0	1	0	0	0	0	0	0	0	0	4	4	82
22:00	0	41	6	0	0	0	0	0	0	0	0	0	0	1	1	48
23:00	0	10	0	0	1	0	0	0	0	0	0	0	0	0	0	11
Total	12	1251	300	2	15	7	1	1	0	0	0	0	0	155	155	1744
Percent	0.7%	71.7%	17.2%	0.1%	0.9%	0.4%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	8.9%		
AM Peak	06:00	11:00	11:00	07:00	08:00	03:00								09:00		
Vol.	1	93	30	1	3	1								12		
PM Peak	14:00	13:00	12:00		13:00	14:00	17:00	16:00						13:00		
Vol.	3	107	40		2	2	1	1						21		

City of Des Moines
Traffic & Transportation Division
Tube Traffic Count
600 E. Court, Suite 200

Site Code:
Station ID:
Diehl Avenue
w of SE 14th Street
Latitude: 0' 0.000 Undefined

EB	Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
	04/11/09	0	14	1	0	0	0	0	0	0	0	0	0	0	0	15
	01:00	0	3	2	0	0	0	0	0	0	0	0	0	0	0	5
	02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
	03:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
	04:00	0	6	0	0	0	0	0	0	0	0	0	0	0	0	6
	05:00	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
	06:00	0	10	1	0	0	0	0	0	0	0	0	0	0	0	14
	07:00	0	23	5	0	0	0	0	0	0	0	0	0	0	0	28
	08:00	1	50	9	0	0	0	0	0	0	0	0	0	0	0	60
	09:00	1	73	19	0	1	0	0	0	0	0	0	0	0	9	103
	10:00	0	99	23	0	2	1	0	0	0	0	0	0	0	15	140
	11:00	1	98	17	0	2	0	0	0	0	0	0	0	0	25	143
	12 PM	1	97	38	0	1	0	0	0	0	0	0	0	0	18	155
	13:00	1	125	31	0	1	0	0	0	0	0	0	0	0	24	182
	14:00	2	103	24	0	3	0	0	0	0	0	0	0	0	29	161
	15:00	2	110	21	0	1	0	0	1	0	0	0	0	0	12	147
	16:00	1	104	13	0	2	0	0	0	0	0	0	0	0	15	132
	17:00	1	97	15	0	0	0	0	0	0	0	0	0	0	16	128
	18:00	1	74	17	0	0	0	0	1	0	0	0	0	0	16	109
	19:00	0	68	12	0	0	0	0	0	0	0	0	0	0	6	86
	20:00	0	74	11	0	0	0	0	0	0	0	0	0	0	5	90
	21:00	0	48	12	0	0	0	0	0	0	0	0	0	0	3	63
	22:00	0	28	5	0	0	0	0	0	0	0	0	0	0	0	33
	23:00	0	5	0	0	0	0	0	0	0	0	0	0	0	0	5
	Total	12	1316	276	0	13	1	0	2	0	0	0	0	0	192	1812
	Percent	0.7%	72.6%	15.2%	0.0%	0.7%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	10.6%	
	AM Peak	08:00	10:00	10:00		10:00	10:00								11:00	25
	Vol.	1	99	23		2	1								29	
	PM Peak	14:00	13:00	12:00		14:00			15:00						14:00	29
	Vol.	2	125	38		3			1						29	

Page 1
Site Code:
Station ID:

Diehl Avenue
e of SE 8th Street
Latitude: 0' 0.000 Undefined

[illegible]

City of Des Moines
 Traffic & Transportation Division
 Tube Traffic Count
 600 E. Court, Suite 200

Site Code:
 Station ID:
 e of SE 8th Street
 Latitude: 0' 0.000 Undefined

Start Time	13-Apr-09		Tue		Wed		Thu		Fri		Sat		Sun		Week Average			
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB		
12:00 AM	4	4	*	*	*	*	*	*	*	*	*	*	*	*	4	4		
01:00	2	0	*	*	*	*	*	*	*	*	*	*	*	*	2	0		
02:00	3	2	*	*	*	*	*	*	*	*	*	*	*	*	3	2		
03:00	3	1	*	*	*	*	*	*	*	*	*	*	*	*	3	1		
04:00	3	12	*	*	*	*	*	*	*	*	*	*	*	*	3	12		
05:00	3	11	*	*	*	*	*	*	*	*	*	*	*	*	3	11		
06:00	15	32	*	*	*	*	*	*	*	*	*	*	*	*	15	32		
07:00	35	50	*	*	*	*	*	*	*	*	*	*	*	*	35	50		
08:00	28	42	*	*	*	*	*	*	*	*	*	*	*	*	28	42		
09:00	31	48	*	*	*	*	*	*	*	*	*	*	*	*	31	48		
10:00	49	52	*	*	*	*	*	*	*	*	*	*	*	*	49	52		
11:00	46	55	*	*	*	*	*	*	*	*	*	*	*	*	46	55		
12:00 PM	59	55	*	*	*	*	*	*	*	*	*	*	*	*	59	55		
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
Lane Day	281	364	0	0	0	0	0	0	0	0	0	0	0	0	281	364		
AM Peak	645		0		0		0		0		0		0		645			
Vol.	49	55															49	55
PM Peak	12:00	12:00															12:00	12:00
Vol.	59	55															59	55

Comb. Total	645	0	0	1015	2495	2492	1558	2818
ADT	ADT 2,182	AADT 2,182						

City of Des Moines

Traffic & Transportation Division
Tubel Traffic Count
600 E. Court, Suite 200

*SPEED
FAIRWAY*

Site Code:
Station ID:
Diehl Avenue
e of SE 8th Street
Latitude: 0' 0.000 Undefined

Start	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	Pace	Number
Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999		Speed	in Pace
04/10/09	0	0	4	4	1	0	0	0	0	0	0	0	0	0	8	20-29	8
01:00	0	0	2	1	1	0	0	0	0	0	0	0	0	0	4	21-30	3
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	17-26	1
04:00	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	*	1
05:00	0	2	1	2	0	0	0	0	0	0	0	0	0	0	5	16-25	3
06:00	5	2	4	3	1	0	0	0	0	0	0	0	0	0	13	15-24	6
07:00	3	2	3	9	3	0	0	0	0	0	0	0	0	0	20	23-32	14
08:00	9	5	16	6	3	1	0	0	0	0	0	0	0	0	40	17-26	22
09:00	4	4	13	11	1	0	0	0	0	0	0	0	0	0	33	21-30	24
10:00	1	3	28	23	4	1	0	0	0	0	0	0	0	0	60	21-30	51
11:00	6	5	29	23	8	0	1	0	0	0	0	0	0	0	72	21-30	52
12 PM	1	9	50	38	10	0	1	0	0	0	0	0	0	0	109	21-30	88
13:00	12	14	31	25	8	0	0	0	0	0	0	0	0	0	90	21-30	56
14:00	3	8	30	34	7	2	0	0	0	0	0	0	0	0	84	21-30	64
15:00	1	14	50	28	6	0	0	0	0	0	0	0	0	0	99	21-30	78
16:00	5	21	56	24	5	0	0	0	0	0	0	0	0	0	111	20-29	81
17:00	1	10	45	30	4	0	0	0	0	0	0	0	0	0	90	21-30	75
18:00	3	25	55	26	5	2	0	0	0	0	0	0	0	0	116	17-26	81
19:00	6	24	35	27	1	0	0	0	0	0	0	0	0	0	93	18-27	62
20:00	1	12	34	22	5	0	0	0	0	0	0	0	0	0	74	21-30	56
21:00	3	7	23	19	8	0	0	0	0	0	0	0	0	0	60	21-30	42
22:00	0	6	22	6	7	1	0	0	0	0	0	0	0	0	58	21-30	44
23:00	0	0	4	6	3	0	0	1	0	0	0	0	0	0	14	22-31	11
Total	65	173	535	382	91	7	2	1	0	0	0	0	0	0	1256		
Percent	5.2%	13.8%	42.6%	30.4%	7.2%	0.6%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	08:00	11:00	10:00	11:00	08:00	11:00								11:00		
Vol.	9	5	29	23	8	1	1								72		
PM Peak	13:00	18:00	16:00	12:00	12:00	14:00	12:00	23:00							18:00		
Vol.	12	25	56	38	10	2	1	1							116		
Total	65	173	535	382	91	7	2	1	0	0	0	0	0	0	1256		
Percent	5.2%	13.8%	42.6%	30.4%	7.2%	0.6%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

Stats
10 MPH Pace Speed : 21-30 MPH
Number in Pace : 917
Percent in Pace : 73.0%
Number of Vehicles > 25 MPH : 483
Percent of Vehicles > 25 MPH : 38.5%
Mean Speed(Average) : 24 MPH

15th Percentile : 19 MPH
50th Percentile : 24 MPH
85th Percentile : 29 MPH
95th Percentile : 33 MPH

City of Des Moines

Traffic & Transportation Division
Tube Traffic Count
600 E. Court, Suite 200

Site Code:
Station ID:
Diehl Avenue
e of SE 8th Street
Latitude: 0' 0.000 Undefined

WB	Start	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	Pace	Number
Time	04/10/09	15	20	25	30	35	40	45	50	55	60	65	70	75	999		Speed	in Pace
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7-16	1
02:00	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	3	19-28	3
03:00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2	17-26	2
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
05:00	0	1	1	2	6	1	0	0	0	0	0	0	0	0	0	9	22-31	8
06:00	3	4	4	9	13	6	1	0	0	0	0	0	0	0	0	8	16-25	5
07:00	2	3	3	10	29	12	4	0	0	0	0	0	0	0	0	36	22-31	23
08:00	10	2	2	14	17	9	2	0	0	0	0	0	0	0	0	60	23-32	41
09:00	2	3	20	22	22	10	0	0	0	0	0	0	0	0	0	54	21-30	31
10:00	4	8	23	23	7	7	1	0	0	0	0	0	0	0	0	57	21-30	42
11:00	2	2	25	24	16	13	3	1	0	0	0	0	0	0	0	66	21-30	46
12 PM	3	6	32	51	13	11	0	0	0	0	0	0	0	0	0	73	21-30	49
13:00	11	6	28	31	11	11	1	1	0	0	0	0	0	0	0	105	21-30	83
14:00	7	4	21	36	16	16	0	0	0	0	0	0	0	0	0	89	21-30	59
15:00	4	7	21	47	14	14	0	0	0	0	0	0	0	0	0	84	21-30	57
16:00	4	17	29	44	14	14	1	0	0	0	0	0	0	0	0	93	21-30	68
17:00	4	6	42	46	13	13	4	0	0	0	0	0	0	0	0	109	21-30	73
18:00	4	15	40	42	8	8	0	0	0	0	0	0	0	0	0	115	21-30	88
19:00	2	6	17	26	1	1	1	0	0	0	0	0	0	0	0	109	21-30	82
20:00	1	5	16	20	4	4	0	0	0	0	0	0	0	0	0	53	21-30	43
21:00	4	3	11	10	5	5	0	1	0	0	0	0	0	0	0	46	21-30	36
22:00	3	3	7	9	1	1	1	0	0	0	0	0	0	0	0	34	21-30	21
23:00	0	1	2	5	1	1	0	0	0	0	0	0	0	0	0	24	20-29	16
																9	22-31	8
Total	70	106	371	507	163	19	3	0	0	0	0	0	0	0	0	1239		
Percent	5.6%	8.6%	29.9%	40.9%	13.2%	1.5%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	10:00	11:00	07:00	11:00	07:00	11:00									11:00		
Vol.	10	8	25	29	16	4	1									73		
PM Peak	13:00	16:00	17:00	12:00	14:00	17:00	13:00									17:00		
Vol.	11	17	42	51	16	4	1									115		
Total	70	106	371	507	163	19	3	0	0	0	0	0	0	0	0	1239		
Percent	5.6%	8.6%	29.9%	40.9%	13.2%	1.5%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile : 21 MPH
50th Percentile : 26 MPH
85th Percentile : 30 MPH
95th Percentile : 34 MPH

Stats
10 MPH Pace Speed : 878
Number in Pace : 70.9%
Percent of Vehicles > 25 MPH : 692
Percent of Vehicles > 25 MPH : 55.9%
Mean Speed(Average) : 25 MPH

City of Des Moines

Traffic & Transportation Division
Tubel Traffic Count
600 E. Court, Suite 200

Site Code:
Station ID:
e of SE 8th Street
Latitude: 0' 0.000 Undefined

Speed
Station ID
Page 1

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	Pace	Number
04/11/09	15	20	25	30	35	40	45	50	55	60	65	70	75	999	8	Speed	in Pace
01:00	0	1	3	3	1	0	0	0	0	0	0	0	0	0	7	19-28	7
02:00	0	1	0	5	2	0	0	0	0	0	0	0	0	0	8	14-23	4
03:00	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	23-32	7
04:00	1	0	0	2	0	0	0	0	0	0	0	0	0	0	2	18-27	2
05:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3	18-27	2
06:00	2	1	3	1	0	0	0	0	0	0	0	0	0	0	1	17-26	1
07:00	1	1	7	7	2	0	0	0	0	0	0	0	0	0	7	17-26	5
08:00	1	1	12	8	3	1	1	0	0	0	0	0	0	0	19	20-29	14
09:00	4	13	22	28	5	0	1	0	0	0	0	0	0	0	27	20-29	20
10:00	1	6	36	31	8	0	0	0	0	0	0	0	0	0	73	21-30	50
11:00	5	7	27	35	7	0	0	0	0	0	0	0	0	0	82	21-30	67
12 PM	3	4	49	47	12	2	0	0	0	0	0	0	0	0	81	21-30	62
13:00	7	7	42	41	13	2	0	0	0	0	0	0	0	0	117	21-30	96
14:00	4	7	38	33	3	2	0	0	0	0	0	0	0	0	112	21-30	83
15:00	7	5	55	33	7	2	0	0	0	0	0	0	0	0	87	21-30	71
16:00	2	18	47	36	8	1	0	0	0	0	0	0	0	0	109	21-30	88
17:00	1	24	45	23	4	1	0	0	0	0	0	0	0	0	112	21-30	83
18:00	7	13	35	18	4	0	0	0	0	0	0	0	0	0	98	17-26	70
19:00	1	13	48	16	5	0	0	0	0	0	0	0	0	0	77	19-28	53
20:00	1	8	23	24	6	0	0	0	0	0	0	0	0	0	83	18-27	64
21:00	0	5	20	9	5	3	0	0	0	0	0	0	0	0	62	21-30	47
22:00	1	5	11	17	3	0	1	0	0	0	0	0	0	0	42	20-29	29
23:00	1	0	5	7	4	0	0	0	0	0	0	0	0	0	38	21-30	28
Total	50	141	531	428	103	15	4	0	0	0	0	0	0	0	1272		
Percent	3.9%	11.1%	41.7%	33.6%	8.1%	1.2%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	11:00	09:00	10:00	11:00	10:00	07:00	01:00								10:00		
Vol.	5	13	36	35	8	1	1								82		
PM Peak	13:00	17:00	15:00	12:00	13:00	21:00	22:00								12:00		
Vol.	7	24	55	47	13	3	1								117		
Total	50	141	531	428	103	15	4	0	0	0	0	0	0	0	1272		
Percent	3.9%	11.1%	41.7%	33.6%	8.1%	1.2%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

Stats

10 MPH Pace Speed : 21-30 MPH
Number in Pace : 959
Percent in Pace : 75.4%
Number of Vehicles > 25 MPH : 550
Percent of Vehicles > 25 MPH : 43.2%
Mean Speed(Average) : 25 MPH

City of Des Moines

Traffic & Transportation Division
Tube Traffic Count
600 E. Court, Suite 200

Site Code:
Station ID:
Diehl Avenue
e of SE 8th Street

Latitude: 0' 0.000 Undefined

VB	Start	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	Pace	Number
Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999			Speed	in Pace
04/11/09	0	1	2	3	3	0	0	0	0	0	0	0	0	0	0	9	24-33	8
01:00	0	0	1	2	1	0	0	0	0	0	0	0	0	0	0	4	22-31	4
02:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	12-21	1
03:00	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2	17-26	1
04:00	0	1	0	0	4	0	0	0	0	0	0	0	0	0	0	5	20-29	4
05:00	0	0	0	2	2	1	1	0	0	0	0	0	0	0	0	4	26-35	3
06:00	5	3	4	3	3	2	0	0	0	0	0	0	0	0	0	17	18-27	9
07:00	0	3	6	13	13	0	1	0	0	0	0	0	0	0	0	26	21-30	19
08:00	0	6	27	19	7	2	0	0	0	0	0	0	0	0	0	61	21-30	46
09:00	1	8	22	27	13	1	0	0	0	0	0	0	0	0	0	72	21-30	49
10:00	6	4	23	48	19	2	0	0	0	0	0	0	0	0	0	102	21-30	71
11:00	11	2	21	40	17	2	0	0	0	0	0	0	0	0	0	93	21-30	61
12 PM	7	3	26	46	10	2	1	0	0	0	0	0	0	0	0	95	21-30	72
13:00	5	4	37	52	15	2	0	0	0	0	0	0	0	0	0	110	21-30	89
14:00	7	6	38	39	15	2	0	0	0	0	0	0	0	0	0	107	21-30	77
15:00	10	8	39	36	11	1	0	0	0	0	0	0	0	0	0	94	21-30	64
16:00	8	7	38	39	7	0	0	0	0	0	0	0	0	0	0	91	21-30	69
17:00	3	10	42	33	8	1	0	0	0	0	0	0	0	0	0	97	21-30	75
18:00	9	5	37	29	7	0	0	0	0	0	0	0	0	0	0	87	21-30	66
19:00	3	6	21	18	4	2	0	0	0	0	0	0	0	0	0	54	21-30	39
20:00	0	2	18	16	3	0	0	0	0	0	0	0	0	0	0	39	21-30	34
21:00	1	1	9	14	2	0	0	0	0	0	0	0	0	0	0	27	21-30	23
22:00	1	3	4	8	2	0	0	0	0	0	0	0	0	0	0	18	22-31	13
23:00	0	0	2	0	3	0	0	0	0	0	0	0	0	0	0	5	24-33	3
Total	77	83	408	483	148	19	2	0	0	0	0	0	0	0	0	1220		
Percent	6.3%	6.8%	33.4%	39.6%	12.1%	1.6%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	11:00	09:00	08:00	10:00	10:00	08:00	07:00									10:00		
Vol.	11	8	27	48	19	2	1									102		
PM Peak	15:00	17:00	17:00	13:00	14:00	12:00	12:00									13:00		
Vol.	10	10	42	52	15	2	1									110		
Total	77	83	408	483	148	19	2									1220		
Percent	6.3%	6.8%	33.4%	39.6%	12.1%	1.6%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile : 21 MPH
50th Percentile : 26 MPH
85th Percentile : 30 MPH
95th Percentile : 34 MPH

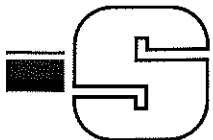
Stats
10 MPH Pace Speed : 21-30 MPH
Number in Pace : 891
Percent in Pace : 73.0%
Number of Vehicles > 25 MPH : 652
Percent of Vehicles > 25 MPH : 53.4%
Mean Speed(Average) : 25 MPH

SOUTHEAST 14TH STREET PROJECT TRAFFIC ANALYSIS DES MOINES, IOWA

DRAFT

In Cooperation with:
City of Des Moines

January 8, 2010



ENGINEERS & PLANNERS

SNYDER & ASSOCIATES

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This study evaluates traffic operations and transportation system improvements needs associated with Southeast 14th Street from McKinley Avenue to Army Post Road in Des Moines, Iowa. Analysis of the corridor for basic performance measures of effectiveness (MOE's) were conducted for AM, OFF, and PM peak hours. Analysis also included the addition of a traffic signal to the intersections of Hart Avenue and Kenyon Avenue. The study corridor includes the intersections of SE 14th Street with McKinley Avenue, Wal-Mart Driveway, Kenyon Avenue, Diehl Avenue, Hart Avenue, Cummins Road, and Army Post Road.

Existing Conditions

Southeast 14th Street is a major arterial roadway with four-lane urban cross section with raised median and dedicated left turn lanes. The posted speed limit is 40 mph from McKinley Avenue to Army Post Road. Southeast 14th Street is also US Highway 69 and the closest Des Moines River crossing west of US Highway 65.

Snyder & Associates evaluated traffic operations and vehicle crash history associated the corridor. Analysis includes manual turning movement counts and 24-hour continuous road tube counts in 2008 and 2009. Figure 1 shows the location of the analysis corridor.



Figure 1: Southeast 14th Street Analysis Area

Traffic Data

The Iowa DOT conducted manual turning movement traffic counts in 2008 at the intersections of SE 14th Street with McKinley Avenue, Diehl Avenue, and Army Post Road. The traffic counts show that SE 14th Street had an Average Annual Daily Traffic (AADT) of approximately 37,800 vehicles per day (vpd) south of McKinley Avenue and 26,000 vpd north of Army Post Road. The percentage of trucks is approximately 2.3% along the corridor. The Iowa DOT 2008 peak hour turning movement traffic volumes and AADT are included appendix.

The Engineer collected 24-hour continuous road tube counts on Hart Avenue just east of SE 14th Street and also exiting lanes of the Menards entrance on SE 14th Street in August 2009. The ADT on Hart Avenue was 179 vpd and the exiting traffic from Menards is 1,651 vpd. The Engineer collected peak hour turning movement counts at the intersections of SE 14th Street with Wal-Mart Driveway, Kenyon Avenue, Diehl Avenue, Hart Avenue, and Cummins Road.

The turning movement counts were taken from 7:00 to 9:00 AM, 11:00 AM to 1:00 PM, and 4:00 to 6:00 PM in August of 2009. Figure 2 shows the AM, Off, and PM Peak Hour traffic volumes along with the ADT. The AM, OFF, and PM peak hour volumes are approximately 12% of the ADT on SE 14th Street.

Crash History

Crash reports for a five year period from January 2004 to December 2008 were reviewed from the Iowa DOT's crash database for the intersections of SE 14th Street with Kenyon Avenue and Hart Avenue. A total of 20 crashes were reported at the intersection of SE 14th Street with Kenyon Avenue. Thirteen of the crashes involved a vehicle failing to yield right of way from a STOP sign or making a left turn. Seven minor injuries were reported along with six possible injuries. The crash rate for the intersection is 0.38 crashes per million entering vehicles (MEV). This is below the state average of similar facilities, which is 0.9 crashes per MEV. At the intersection of SE 14th Street with Hart Avenue, 10 crashes were reported with 7 of the crashes involving a vehicle failing to yield right of way from a STOP sign or making a left turn. Two major injuries, 2 minor injuries, and 10 possible injuries were reported with those crashes. The crash rate is 0.19 crashes per MEV for the intersection.

Additional crash reports were reviewed for the intersections of SE 14th Street with Diehl Avenue and Cummins Road. The intersection of SE 14th Street with Diehl Avenue had a total of 26 reported crashes from 2004-2008. Four crashes involved a vehicle failing to yield right of way and six crashes involving vehicles following too close. The crash rate for this intersection is 0.48 crashes per MEV. At the intersection of SE 14th Street with Cummins Road, 26 crashes were reported. Five crashes involved vehicles failing to yield right of way and seven vehicles running traffic signal. The crash rate is 0.48 crashes per MEV.

Travel Time Study

The Engineer performed travel time studies of the corridor for determination of average speed characteristics. The studies were performed for the AM peak, Off Peak, and PM peak. For each peak period, the corridor was driven four round times (four northbound trips and four southbound trips). Table 1 lists the average speed and travel time for each peak period. The Travel time study worksheets are included in the appendix.

Table 1: Travel Time Study Results

Time Period	Average Speed (mph)	Average Travel Time (s)	Average Delay (s)	Number of Stops
AM Peak	28	162	52	1
Off Peak	25	175	63	2
PM Peak	26	164	55	1

Capacity Analysis

Capacity analysis was completed using the analysis techniques outlined in the *Highway Capacity Manual, 2000 Edition* (HCM), published by the Transportation Research Board. *Synchro Version 7*, traffic analysis software was used to calculate MOE's including stops, vehicle delay, level of service (LOS), and average corridor speed. Additional analysis performed for the peak periods include fuel consumption and emissions outputs. Peak hour analyses, including AM, Off, and PM peak, were conducted for all intersections in the corridor for current traffic

conditions. Three additional scenarios were analyzed with current traffic conditions including, adding a traffic signal at Hart Avenue, relocating the traffic signal from Cummins Road to Hart Avenue, and adding a traffic signal at Kenyon Avenue. Table 2 summarizes the MOE's for the existing conditions in the corridor and intersections, Table 3 for adding a traffic signal at Hart Avenue, Table 4 for relocating the traffic signal, and Table 5 adding a traffic signal at Kenyon Avenue. The capacity worksheets are included in the appendix.

**Table 2: MOE's Analysis Results
(Existing Conditions)**

Intersection of SE 14th Street with	Traffic Control	Movement Analyzed*	AM Peak			OFF Peak			PM Peak		
			Stops	Vehicle Delay	LOS	Stops	Vehicle Delay	LOS	Stops	Vehicle Delay	LOS
McKinley Ave	SGL		756	10	B	837	8	A	1963	15	B
Wal-Mart Driveway	SGL		362	5	A	1688	18	B	1191	13	B
Kenyon Ave	STOP	EB	53	21	C	79	25	D	71	31	D
Diehl Ave	SGL		433	6	A	1000	10	B	955	6	A
Hart Ave	STOP	WB	162	31	D	247	34	D	278	39	E
Cummins Road	SGL		462	6	A	1172	15	B	1066	11	B
Army Post Road	SGL		1130	20	C	1165	18	B	1604	20	C
Total Delay (hr)			26			51			58		
Total Stops			3358			6188			7128		
Corridor Speed (mph)			27			25			25		
Fuel Consumed (gal)			136			221			261		
CO Emissions (kg)			9.48			15.43			18.23		
NO _x Emissions (kg)			1.84			3.00			3.55		
VOC Emissions (kg)			2.20			3.58			4.22		

* Overall Intersection for signalized intersections, critical movement for unsignalized intersections

**Table 3: MOE's Analysis Results
(Adding Traffic Signal at Hart Avenue)**

Intersection of SE 14th Street with	Traffic Control	Movement Analyzed*	AM Peak			OFF Peak			PM Peak		
			Stops	Vehicle Delay	LOS	Stops	Vehicle Delay	LOS	Stops	Vehicle Delay	LOS
McKinley Ave	SGL		770	10	B	825	8	A	1946	15	B
Wal-Mart Driveway	SGL		362	5	A	1687	18	B	1154	13	B
Kenyon Ave	STOP	EB	53	21	C	79	25	D	71	31	D
Diehl Ave	SGL		418	5	A	929	9	A	939	6	A
Hart Ave	SGL		213	3	A	694	4	A	1409	9	A
Cummins Road	SGL		456	6	A	1169	14	B	920	12	B
Army Post Road	SGL		1144	20	C	1204	19	B	1737	22	C
Total Delay (hr)			27			53			65		
Total Stops			3416			6587			8176		
Corridor Speed (mph)			27			24			24		
Fuel Consumed (gal)			137			226			277		
CO Emissions (kg)			17.3			15.82			19.35		
NO _x Emissions (kg)			9.58			3.08			3.76		
VOC Emissions (kg)			1.86			3.67			4.48		

* Overall Intersection for signalized intersections, critical movement for unsignalized intersections

**Table 4: MOE's Analysis Results
(Relocating Traffic Signal from Cummins Road to Hart Avenue)**

Intersection of SE 14th Street with	Traffic Control	Movement Analyzed*	AM Peak			OFF Peak			PM Peak		
			Stops	Vehicle Delay	LOS	Stops	Vehicle Delay	LOS	Stops	Vehicle Delay	LOS
McKinley Ave	SGL		758	10	B	839	8	A	1959	15	B
Wal-Mart Driveway	SGL		365	5	A	1742	19	B	1348	14	B
Kenyon Ave	STOP	EB	53	21	C	79	25	D	71	31	D
Diehl Ave	SGL		417	5	A	988	10	B	978	6	A
Hart Ave	SGL		327	5	A	1047	7	A	1739	11	B
Cummins Road	STOP	EB	172	24	C	622	821	F	496	895	F
Army Post Road	SGL		1180	20	C	1385	21	C	1777	24	C
Total Delay (hr)			26			96			100		
Total Stops			3272			6702			8368		
Corridor Speed (mph)			27			19			20		
Fuel Consumed (gal)			135			258			304		
CO Emissions (kg)			9.42			18.05			21.23		
NO _x Emissions (kg)			1.83			3.51			4.13		
VOC Emissions (kg)			2.18			4.18			4.92		

* Overall Intersection for signalized intersections, critical movement for unsignalized intersections

**Table 5: MOE's Analysis Results
(Adding Traffic Signal at Kenyon Avenue)**

Intersection of SE 14th Street with	Traffic Control	Movement Analyzed*	AM Peak			OFF Peak			PM Peak		
			Stops	Vehicle Delay	LOS	Stops	Vehicle Delay	LOS	Stops	Vehicle Delay	LOS
McKinley Ave	SGL		794	11	B	824	8	A	1958	15	B
Wal-Mart Driveway	SGL		384	6	A	1691	17	B	1063	13	B
Kenyon Ave	SGL		848	11	B	717	5	A	713	5	A
Diehl Ave	SGL		388	5	A	1024	11	B	1604	10	B
Hart Ave	STOP	WB	162	31	D	247	34	D	278	39	E
Cummins Road	SGL		331	4	A	1257	15	B	842	10	B
Army Post Road	SGL		1120	19	B	1135	18	B	1617	21	C
Total Delay (hr)			29			55			63		
Total Stops			4027			6895			8075		
Corridor Speed (mph)			26			24			24		
Fuel Consumed (gal)			145			230			274		
CO Emissions (kg)			10.13			16.08			19.14		
NO _x Emissions (kg)			1.97			3.13			3.72		
VOC Emissions (kg)			2.35			3.73			4.44		

* Overall Intersection for signalized intersections, critical movement for unsignalized intersections

Traffic Signal Warrant Analysis

Manual on Uniform Traffic Control Devices (MUTCD) traffic signal warrants were reviewed for current traffic volumes at the intersections SE 14th Street with Hart Avenue and with Kenyon Avenue. Warrant analysis worksheets are included in the appendix.

The intersection of SE 14th Street with Hart Avenue satisfies three traffic signal warrants with current traffic volumes. Eight hour vehicular volume warrant was satisfied by warrant 1B interruption of continuous traffic. A minimum of eight hours are needed but nine hours were

satisfied. Warrant 2, four hour volume, was satisfied with six hours meeting the minimum traffic volumes. Peak hour warrant was satisfied for peak hour volumes. The highest hourly volume for eastbound vehicles is 159 with 126 vehicles turning right. If the eastbound right turning volume was discounted by 20% to remove the right turning vehicles from the total movement volume, only the four hour volume warrant is satisfied. Any greater discount than 20% would not satisfy any warrants.

No traffic signal warrants were satisfied for the intersection of SE 14th Street with Kenyon Avenue. The highest hourly volume on Kenyon Avenue is 25 vehicles for the eastbound movement.

Recommendations

At this time, a traffic signal at the intersections of SE 14th Street with Hart Avenue and Kenyon Avenue is not recommended based on current traffic volumes, delay, and crash history. Also relocation the traffic signal from Cummins Road to Hart Avenue is not recommended because of the higher traffic volumes at Cummins Road. The existing traffic signals in the corridor are under utilized and under capacity. It is recommended that any new development and existing development that do not have access to a traffic signal should provide routes for traffic to utilize existing traffic signals.

If a traffic signal was installed at Hart Avenue, travel time and vehicle delay will increase. As a factor of increased travel time and vehicle delay, fuel consumption and vehicle emissions will also increase for the corridor.

Valuation of Travel Time shows calculated 2000 hourly value of travel time for SE 14th Street traffic per guidance provided by the US Department of Transportation "Revised Departmental Guidance Valuation of Travel Time in Economic Analysis", February 11, 2003. Calculated hourly values are used to evaluate the increase in vehicle delay and travel time with proposed improvements. Percentages of local, intercity and truck traffic were estimated based on available data. The average hourly rate is \$17.50 per vehicle-hour. Travel time calculations are based on existing peak hour traffic and calculated average speeds from *SimTraffic*, Version 7, traffic analysis software. The total corridor length analyzed is the same for the existing conditions and the proposed installation of a traffic signal at Hart Avenue. Peak hour traffic volumes, average speeds and segment lengths were used to calculate vehicle-hours of travel time for each segment of corridor. Daily travel time was calculated based on AM, OFF, and PM peak hour traffic representing approximately 12% of daily traffic. The increased travel time represents annual user cost of \$533,000.

Fuel consumption is based on an average fuel economy of 16.3 mpg, per Mobile 6.2 outputs furnished by the Iowa DOT. The hourly idling fuel consumption is calculated by dividing 2.5 mph by 16.3 mpg. Annual increase in fuel consumption is determined by multiplying the hourly idling fuel consumption by the annual increased intersection delay. An average fuel price of \$3.25 per gallon is used to determine annual fuel cost savings, per Table VIII-5. The increased annual fuel consumption is 4,490 gallons for a total user cost of \$14,590.

Emission factors in grams/mile for carbon monoxide (CO), hydrocarbons volatile organic compounds (VOC(HCs)), and Nitrogen Oxide (NO_x) were developed from the EPA's MOBILE

6.2 air quality model. The Iowa Department of Transportation provided outputs of the model for operating speeds along city arterials. The projected annual increase of emissions is 2,531 kg of CO, 797 kg of VOC(HC_s), and 458 kg of NO_x. The user cost increase of emission is \$3,500 annually. Dollar values for the emission damage costs are from Table VIII-5 of the March 2009 "Final Regulatory Impact Analysis – Corporate Average Fuel Economy for MY 2011 Passenger Cars and Light Trucks".

Appendix

- **Traffic Counts**
- **Crash Summary**
- **Signal Warrant Worksheets**
- **Capacity Analysis Worksheets**