



# City of Phoenix

OFFICE OF THE CITY MANAGER

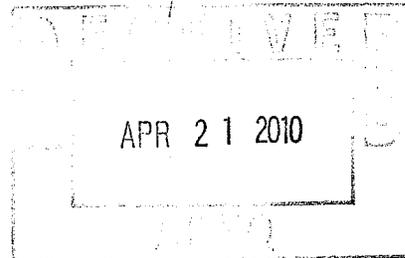
pc 4189

April 21, 2010

Phoenix 2009



Ms. Jennifer Edwards Thies  
WQARF Unit Manager  
Arizona Department of Environmental Quality  
1110 West Washington Street, 4415B-1  
Phoenix, AZ 85007



Re: City of Phoenix Comments on West Van Buren ("WVB") WQARF Site  
Roosevelt Irrigation District ("RID") Early Response Action Work Plan

Dear Ms. Thies:

The City of Phoenix (the City) appreciates the opportunity to provide written comments on the proposed Early Response Action (ERA) Work Plan, dated February 3, 2010 (Work Plan), submitted by the Roosevelt Irrigation District (RID) regarding the West Van Buren WQARF Site. These comments supplement the oral comments presented to the Arizona Department of Environmental Quality (ADEQ) by Philip McNeely during the March 23, 2010, WVB Community Advisory Board Meeting.

RID contends in the Work Plan that an ERA is required "to reduce the adverse impact and threat of extensive groundwater contamination in the West Van Buren Area (WVBA) Water Quality Assurance Revolving Fund..." and is also necessary "to mitigate current risks to public health from exposures to contaminants in the groundwater and to contaminants that may volatilize into the air". RID's assertion that current risk to public health necessitates ADEQ approval of the RID ERA is not supported by the data in the record. Indeed, the City and other stakeholders conducted an evaluation of available water quality data for the RID Salt, Main and Lateral canal systems. That evaluation entitled "Comments Upon and Recommendation for Assessing Risk in the West Van Buren WQARF Area" is attached. The Salt and Lateral canals are almost exclusively piped below ground and hence not accessible to the public. Further, water quality data available for the Main canal indicate contaminant concentrations well below ADEQ Surface Water Quality Standards for fish consumption and partial body contact, and below the 1998 draft Arizona Department of Health Services' Health Based Guidance Levels for open conveyance of water. RID's assertions that there is a current public health risk that requires approval of the ERA are unfounded.

While the City supports the remediation of the aquifer and this valuable future water supply, the scope of the Work Plan and the process proposed by RID are troubling and not consistent with Arizona statutes and regulations. RID's plan also raises policy issues regarding the long-term management of water supplies in Active Management Areas regulated by the Groundwater Management Act. RID's characterization of its proposed course of action as a WQARF ERA is inappropriate for a proposed remedy of this magnitude. The ERA is technically unsound and goes far beyond what is required to reach a reasonable solution.

The ERA process is intended to encourage localized source removal and/or containment remedies that are reasonable, technically feasible, cost effective, and contribute favorably to a final remedy. The action proposed by RID exceeds a practical final remedy in both scope and cost. In fact, RID's ERA Work Plan is best characterized as a regional water quality management plan, with the withdrawal, treatment, and distribution to new end-users of up to 20,000 gallons per minute of groundwater. The withdrawal and use of that water by RID for purposes other than its historical obligation as irrigators of agricultural lands also raises questions of water rights, policy, and law that should be examined with input from all affected stakeholders, not hastily considered as an ERA.

Some of the issues that must be addressed include:

- RID's long-term rights to pump groundwater outside its service area;
- The impacts of mining additional groundwater in the Phoenix AMA;
- Allowing municipal growth based on mined groundwater to occur with no certainty that the water will be physically, legally and continuously available for 100 years pursuant to Assured and Adequate Water supply requirements;
- How the future replenishment obligation fits into the Central Arizona Groundwater Replenishment District's ("CAGRDR") plans when the statutory replenishment exemption expires in 2025 and the current CAGRDR Plan of Operation only allows for enrollment of new obligations through 2015; and
- How service area rights overlying this aquifer are impacted.

RID's proposal to continue pumping, with new groundwater treatment, and market the water for potable use seems designed to suit the district's long-term water delivery interests rather than designed to effectively remediate the plume. It also vastly complicates the remedy by requiring changes in water law, new user agreements, and imposing potential new risks, liabilities, and unnecessary consequences to existing and future water users.

The City and other stakeholders have suggested that the contaminant plume can be remediated with a far more efficient and less costly approach by focusing on contaminant source areas and zones of highest contaminant concentrations in the aquifer. Since this approach focuses on the contaminant source areas, the aquifer will be remediated more quickly and effectively than the proposal to pump preexisting RID wells that are screened across multiple aquifers and randomly located within the area.

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The focused source removal approach would require pumping and treating much less ground water, hence, significantly reduce the site remediation costs. Prior to developing a precise remediation plan, groundwater modeling will have to be utilized to determine the ideal location of the remediation wells, screened intervals, and pumping volumes. In addition, a study of the appropriate end uses of the remediated water will have to be completed.

There is substantial support in the stakeholder and business community to have ADEQ convene a technical working group, in which RID can participate, to develop and implement a workable WVB WQARF Site remediation plan. Entities involved in the WVB WQARF Site and the Motorola 52nd Street Superfund Site are willing to participate and offer input on both technical and water policy issues posed by the proposed remedy.

The City, as a future user of the water resources of this area, is supportive of any effective long-term remedial actions. However, RID's choice to frame the proposal as an "Early Response Action" not only strains credulity but is flawed in that it omits the very process of meaningful stakeholder involvement and consideration of water quality and future water resource development that produced the innovative WQARF statute 13 years ago. We respectfully request that ADEQ disapprove the RID ERA and instead complete the Final Remedial Investigation and Feasibility Study process prescribed by WQARF by convening a working group of stakeholders to proceed with the FS. That process will almost certainly be more fruitful and effective than approving a flawed ERA proposal designed to support litigation rather than produce necessary and cost-effective remediation.

Thank you for considering the City's comments concerning the RID's ERA Work Plan. We are available to meet with ADEQ to discuss these comments, and welcome the opportunity to participate in any process designed to produce a productive resolution to the West Van Buren groundwater contamination issue.

Sincerely,



Thomas Buschatzke  
Water Resources Management Advisor

c: Jerome Miller, City Manager's Office  
Rick Naimark, City Manager's Office  
David Krietor, City Manager's Office  
Phillip McNeely, Office of Environmental Programs

Attachments

## **Comments Upon and Recommendations for Assessing Risk in the West Van Buren WQARF Area**

### **Introduction**

On February 3, 2010, the Roosevelt Irrigation District ("RID") submitted to the Arizona Department of Environmental Quality ("ADEQ") its "Revised RID Early Response Action Work Plan, West Van Buren Water Quality Assurance Revolving Fund Site." In the Work Plan and subsequent correspondence contained in the administrative record, RID asserted that approval of its purported Early Response Action is "necessary to mitigate current risks to public health from exposures to hazardous substances present in the groundwater and to hazardous substances that may volatilize into the air."<sup>1</sup>

This paper evaluates whether existing data support the contention that there is a current unacceptable risk to public health that must be addressed by immediate approval of the RID Early Response Action in its entirety. As explained further below, the data do not support RID's contention that its Work Plan must be approved and its Early Response Action implemented to abate a current public health risk. Because the data do not support that contention, it is suggested that Work Plan approval be withheld pending an appropriate evaluation of the alleged current public health risk that the RID proposal purports to address. Further, because of the limitations of the existing data set, this paper proposes a process for collecting additional data sufficient to allow the Arizona Department of Health Services to evaluate the potential public health risk.

RID operates approximately 31 wells in the West Van Buren WQARF area, which is located in west Phoenix and bounded by 7<sup>th</sup> Avenue, McDowell Road, 83<sup>rd</sup> Avenue, and Lower Buckeye Road. Groundwater pumped from this area is currently conveyed along with effluent from the City of Phoenix 23<sup>rd</sup> Avenue Wastewater Treatment Plant and groundwater pumped from other RID wells for use as irrigation water by RID's customers in the far west Valley, outside of the WQARF area (Figure 1). Although RID presently delivers only non-potable water, its Work Plan details a proposal to convert its system into a potable water supply system.

The cursory evaluation of risk in the Work Plan does not fully identify alleged potential complete exposure pathways. However, RID's contention that its Early Response Action is necessary to abate a current substantial public health risk appears to be premised upon three alleged risks. The first is the detection of volatile organic compounds, principally TCE, PCE, and 1, 1 DCE at levels above drinking water standards within certain RID production wells; these wells currently supply water used for irrigation. The second pertains to the RID canal surface water quality, to the extent the canals are known to serve as a source of agricultural and urban irrigation water and because of the potential body contact in those portions of the canal that are not covered

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<sup>1</sup> Letter of February 23, 2010 from Stanley H. Ashby, Roosevelt Irrigation District, to The Honorable Janice K. Brewer, Governor, State of Arizona, p. 2.

warehouses, and industrial facilities (Figures 7 and 10). The open segments of RID's canal system could potentially represent an exposure pathway through dermal contact, inhalation, and incidental ingestion.

Of the 31 RID wells in the WVB WQARF area, 13 wells discharge directly to the RID Main Canal, 8 wells discharge to Main Canal laterals, and 10 wells discharge to the Salt Canal (Figure 11). Groundwater sampling data from the RID wells have been collected on numerous occasions. Table 1 summarizes TCE, PCE, and 1, 1 DCE groundwater sampling data for September 2008 from RID wells within the WVB WQARF area (based on the February 3, 2010 Revised RID Work Plan). For the RID Salt Canal wells, TCE concentrations ranged from <0.58 to 85 µg/l, with an average concentration of approximately 18 µg/l; PCE concentrations ranged from 3.9 to 39 µg/l, with an average of approximately 11 µg/l; and 1, 1 DCE concentrations ranged from <0.50 to 7.4 µg/l, with an average of approximately 3.1 µg/l. Of the wells sampled on the RID Main Canal, one well, RID-84, contained detectable levels of TCE (1.3 µg/l), PCE (9.4 µg/l) and three wells (RID-84, RID 101, and RID 103) contained detectable levels of 1,1 DCE ranging from 0.85 to 2 µg/l. For wells located on the RID Main Canal Laterals, TCE concentrations ranged from < 0.5 to 85 µg/l; PCE concentrations ranged from 1.2 µg/l to 19 µg/l; 1, 1 DCE concentrations ranged from <0.5 to 9.3 µg/l.

Surface water sampling data from the RID Main Canal, Main Canal laterals, and Salt Canal within the WVB WQARF area have been collected twice, in 2000 and 2003 (ADEQ RI, October 2008). Although limited, the most recent 2003 canal sampling data show that TCE, PCE, and 1, 1 DCE concentrations were 1.0 µg/l, 7.6 µg/l, and 1.3 µg/l, respectively at the upstream end of the RID Main Canal near 19<sup>th</sup> Avenue and were 4, 4, and <1 µg/l, respectively in the RID Main Canal immediately downstream of well RID-84, near 75<sup>th</sup> Avenue. Sampling results for the Salt Canal west of 75<sup>th</sup> Avenue showed a PCE concentration of 8.7 µg/l and TCE concentration of 13 µg/l, and 1, 1 DCE concentration of 2.1 µg/l. More recent canal sampling data are not available.

The RID Conveyance system is not specifically listed in the Arizona Surface Water Quality Standards. However, for this evaluation, the groundwater and canal sampling data were compared to established numeric surface water standards to determine whether a potentially complete exposure pathway exists. Specifically, the water quality data were compared to: 1) ADEQ 2009 Final Surface Water, Partial Body Contact Standards, 2) 1998 Arizona Department of Health Services (ADHS) Draft End Use Standards for open water conveyance, and 3) Final Health Based Guidance Levels (HBGLs) established by the ADHS for other Sites in Arizona (ADHS, October 10, 2000) (Table 2). The comparative analysis shows that the detected RID canal concentrations are less than the Final Standards and a complete current exposure pathway is not present.

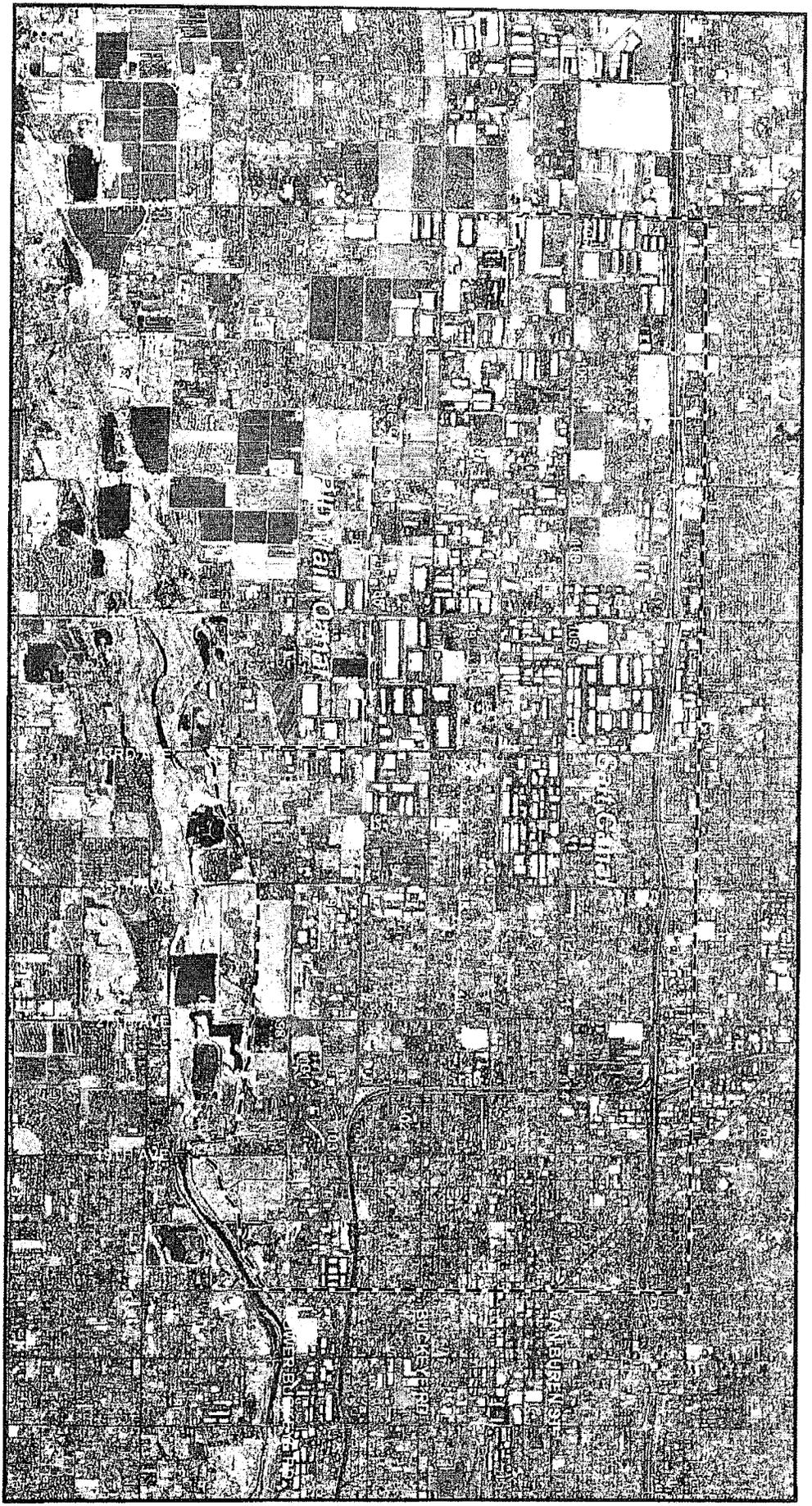
Although canal sampling data further downstream were not available, based on RID's current operational practices of blending groundwater from impacted wells with effluent and other clean wells downstream of the WVB WQARF area, it appears unlikely that any VOCs would be detected in the irrigation water at the first delivery point in the RID

**Table 1. September 2008 RID Well Water Quality Data\*.**

Discharge Location	RID Well Discharge	Concentrations (µg/L)		
		TCE	PCE	1,1 DCE
Salt Canal	105	0.58	3.9	0.78
	106	13	39	7.4
	107	11	13	4.7
	108	3.2	10	0.98
	109	7.7	8.5	3.2
	110	1.8	7.7	<0.5
	112	19	4.5	0.91
	113	18	4.2	<0.5
	114	85	4.6	3.7
	RID Main Canal	84	1.3	9.4
85		<0.5	<0.5	<0.5
86		<0.5	<0.5	<0.5
87		NA	NA	NA
88		<0.5	<0.5	<0.5
90		NA	NA	NA
91		NA	NA	NA
93		<0.5	<0.5	<0.5
96		NA	NA	NA
97		<0.5	<0.5	<0.5
98		NA	NA	NA
101		<0.5	<0.5	2
103		<0.5	<0.5	1.6
RID Main Canal Laterals	89	32	11	3.2
	92	85	19	4.4
	94	0.81	1.2	0.98
	95	56	5.2	6.9
	99	0.71	7.9	2
	100	34	7.8	9.3
	102	<0.5	12	<0.5
	104	1.2	7.5	1

\*Data Source: Work Plan, Roosevelt Irrigation District Early Response Action, West Van Buren WQARF Site, February 3, 2010.

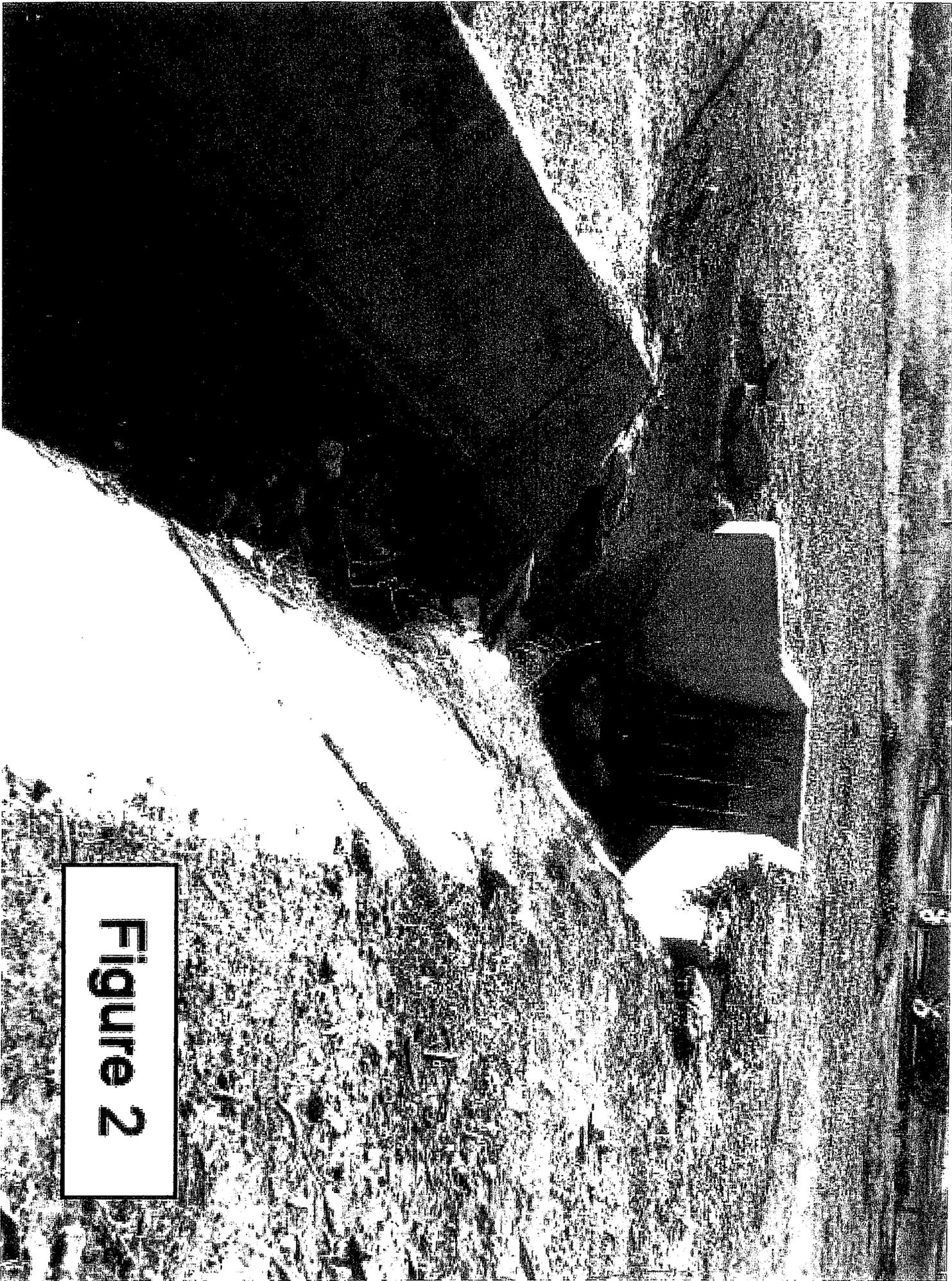
# RID Facilities Inside The West Van Buren WQARF



- Legend**
- OPEN LATERAL
  - RID WELLS INSIDE WEST VAN BUREN WQARF
  - PIPED LATERAL
  - WEST VAN BUREN WQARF

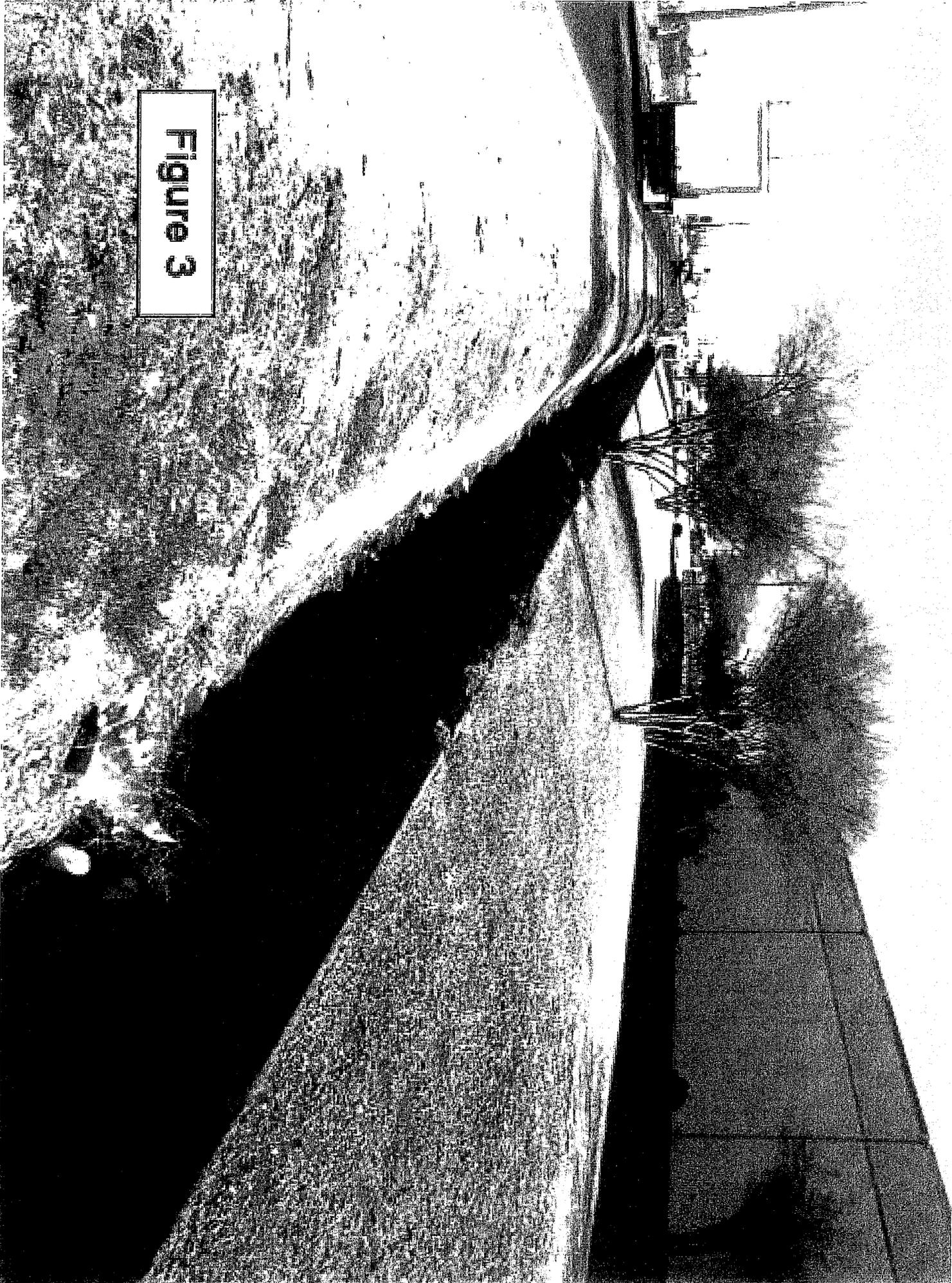
FIGURE 1

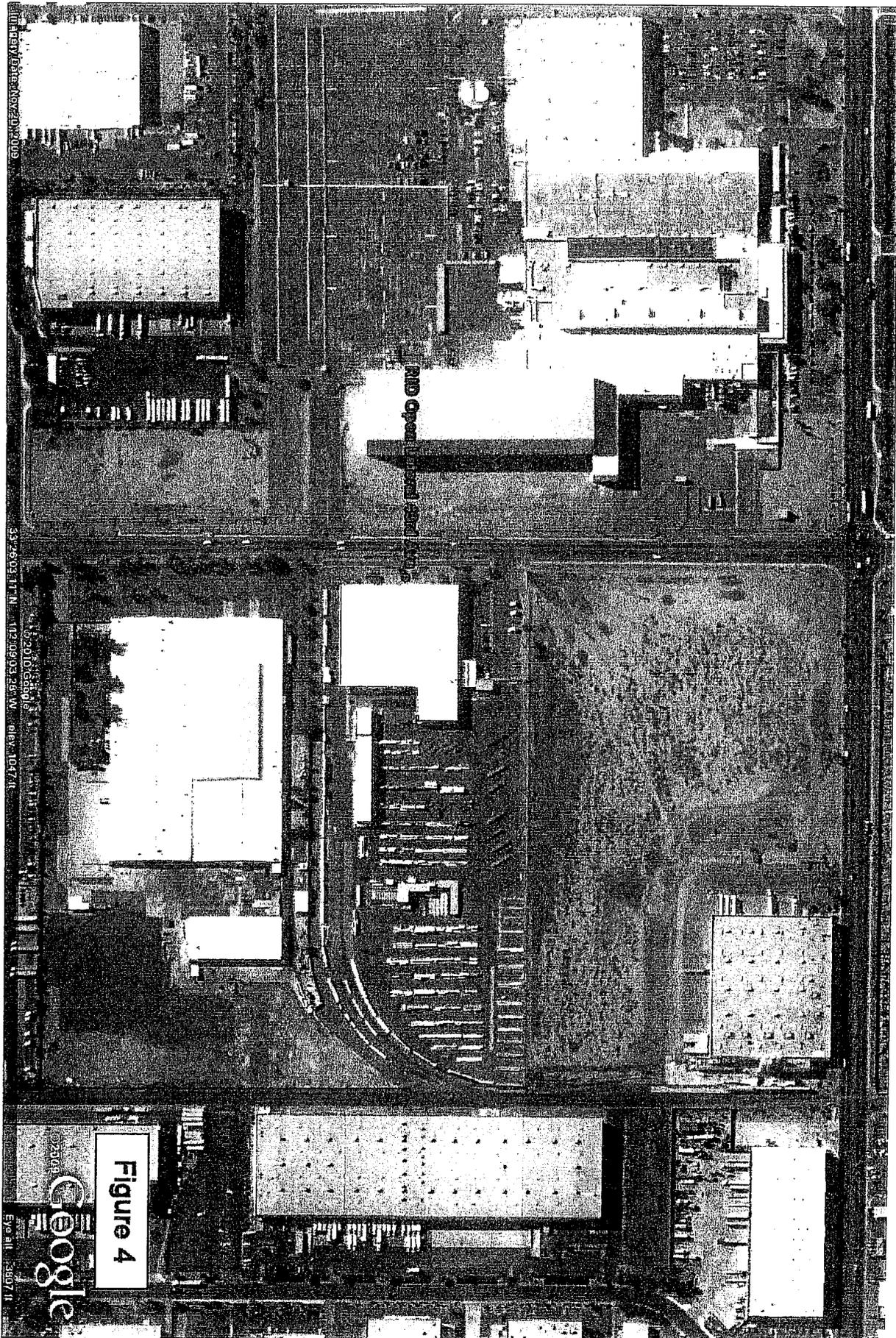




**Figure 2**

**Figure 3**





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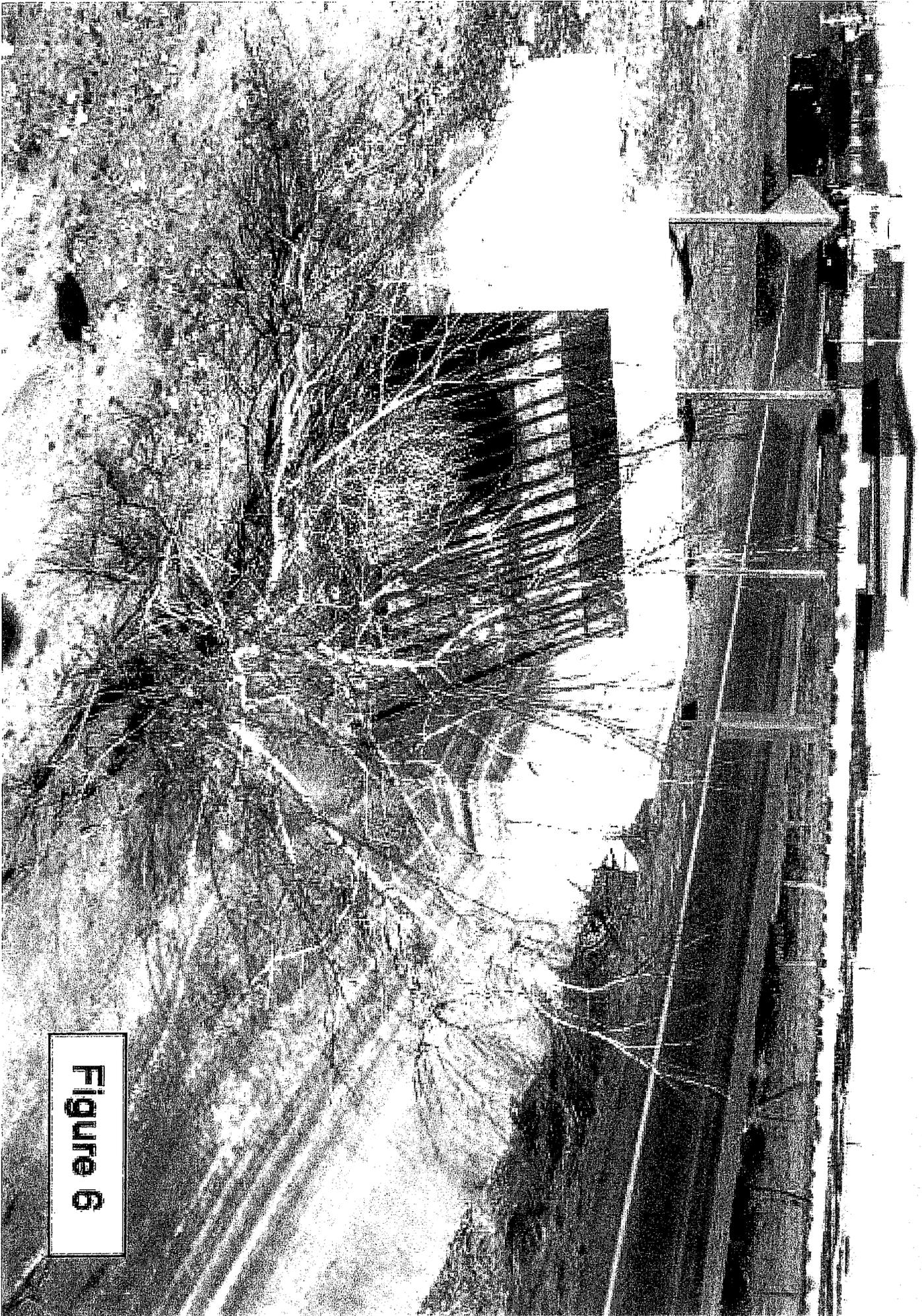
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Figure 4

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**Figure 5**



**Figure 6**

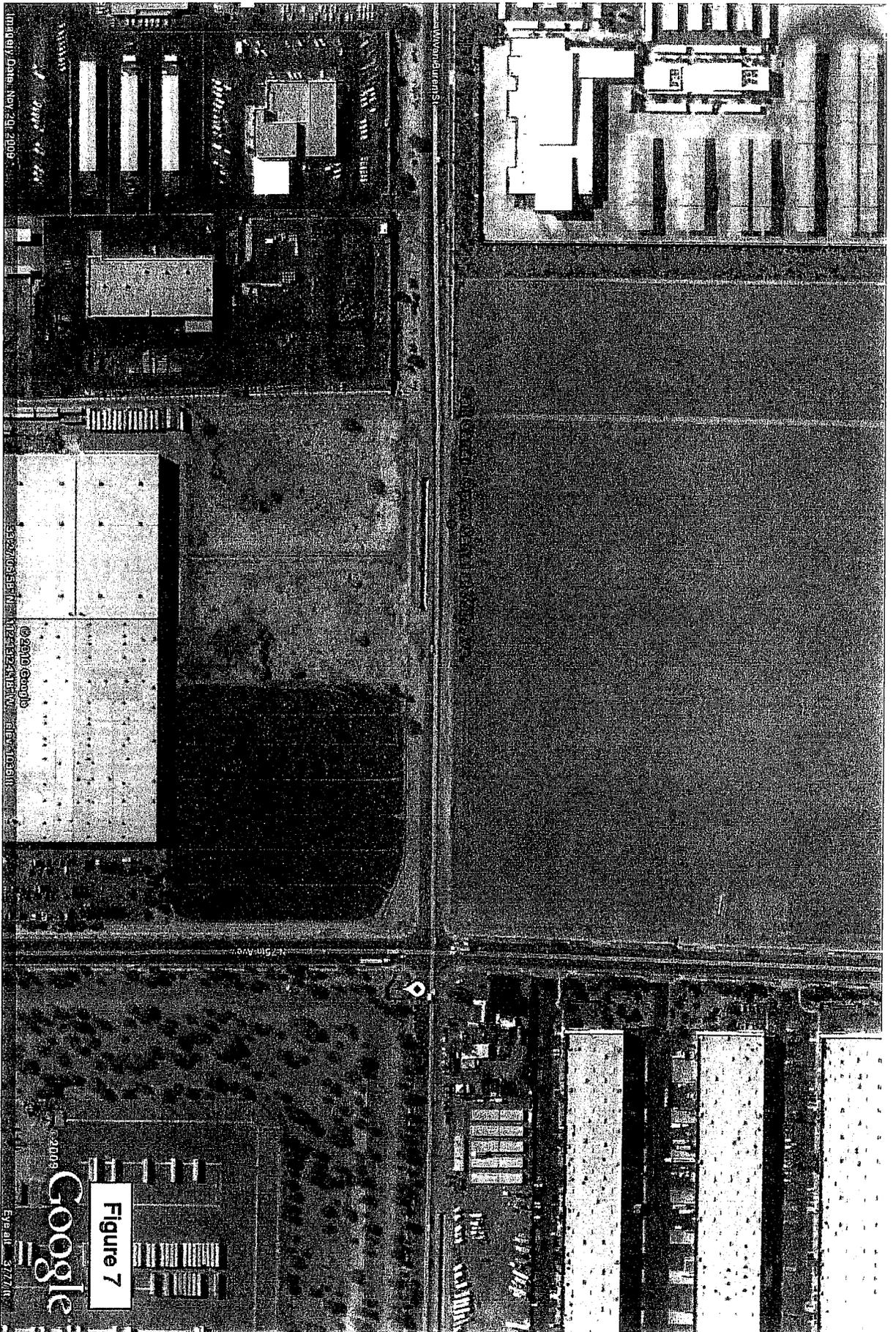


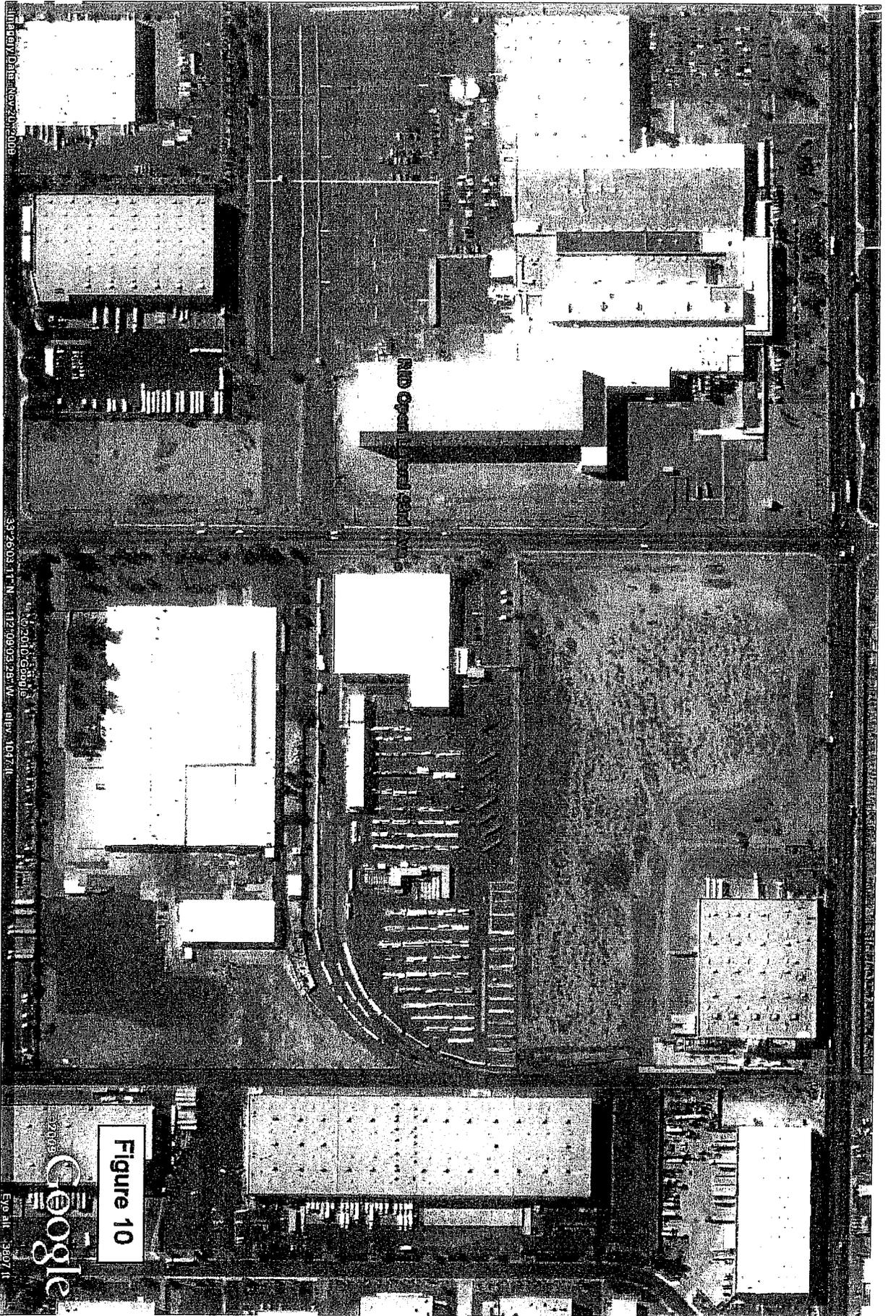
Figure 7

Figure 8





Figure 9



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33°26'03.11"N, 112°09'03.29"W, elev. 1047.0

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Figure 10

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