

Baseline Health Risk Assessment
for OU-2 Soil Gas and Groundwater
Nevada Environmental Response Trust
Henderson, Nevada

APPENDICES

Baseline Health Risk Assessment
for OU-2 Soil Gas and Groundwater
Nevada Environmental Response Trust
Henderson, Nevada

APPENDIX A
ZONE OF INFLUENCE FOR REMEDIAL INVESTIGATION SOIL GAS
SAMPLES

TABLE A-1. Soil Gas Sampling Zone of Influence Descriptions, Phase 2 RI Modification No. 11
Nevada Environmental Response Trust Site
Henderson, Nevada

| LOCATION ID | FIGURE # | DESCRIPTION OF STRUCTURES WITHIN ZONE OF INFLUENCE |
|-------------|----------|---|
| RISG-1 | A-1.1 | One monitoring well (PC-67); street utilities; asphalt street; five housing structures with concrete driveways and gravel covered lots. |
| RISG-2 | A-1.2 | One monitoring well (PC-24); street utilities; asphalt street; one industrial building to the north with asphalt parking lot. |
| RISG-3 | A-1.3 | One monitoring well (PC-21A); automobile salvage yard on dirt lot. |
| RISG-4 | A-1.4 | Two monitoring wells (PC-172 and PC-172D); street utilities; asphalt street; six housing structures with concrete driveways and gravel covered lots. |
| RISG-5 | A-1.5 | One monitoring well (PC-169); street utilities; asphalt street; three housing structures with concrete driveways and gravel covered lots. |
| RISG-6 | A-1.6 | Two monitoring wells (PC-122 and ART-7); street utilities; asphalt street; asphalt parking lot to the north. |
| RISG-7 | A-1.7 | One monitoring well (PC-167); street utilities; asphalt street; five housing structures with concrete driveways and gravel covered lots. |
| RISG-8 | A-1.8 | Two monitoring wells (PC-64 and PC-179); street utilities; asphalt street; six housing structures with concrete driveways and grass or gravel covered lots. |
| RISG-9 | A-1.9 | One monitoring well (PC-166); street utilities; asphalt street; unpaved dirt lot; concrete parking lot to the north. |
| RISG-27 | A-1.10 | Two monitoring wells (M-48A and PC-189); two industrial buildings; automobile salvage yard on asphalt. |
| RISG-28 | A-1.11 | Two monitoring wells (M-96 and PC-186); one industrial building; automobile salvage yard on asphalt. |
| RISG-29 | A-1.12 | One monitoring well (PC-175); street utilities; asphalt street; six housing structures with concrete driveways and gravel covered lots. |
| RISG-30 | A-1.13 | One monitoring well (PC-50); street utilities; asphalt street; contractor/trucker storage lot and asphalt parking lot to the north. |

Note:




RI = Remedial Investigation

Baseline Health Risk Assessment
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Nevada Environmental Response Trust
Henderson, Nevada

ATTACHMENT A-1
SOIL GAS LOCATION ZONE OF INFLUENCE FIGURES, PHASE 2 RI
MODIFICATION NO. 11



Legend

-  Remedial Investigation Soil Gas Location
-  NERT Active Monitoring Well
-  Zone of Influence (100 feet)

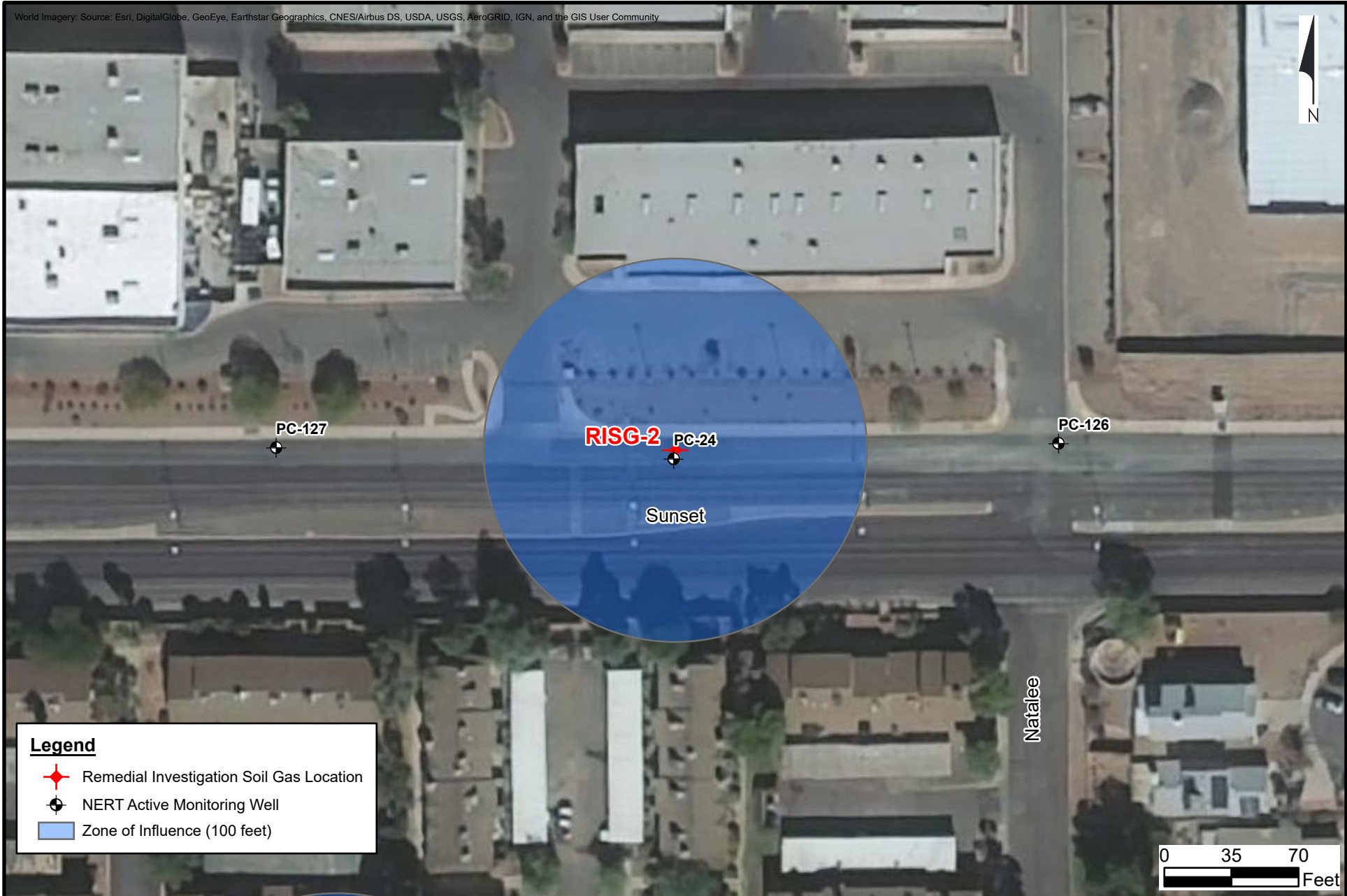
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
Soil Gas Location: RISG-1 and Zone of Influence
 Nevada Environmental Response Trust
 Henderson, Nevada

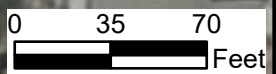
Figure
A-1.1

Drafter: GM Date: 4/20/2021 Contract Number: 1690020169-007 Approved: _____ Revised: _____



Legend

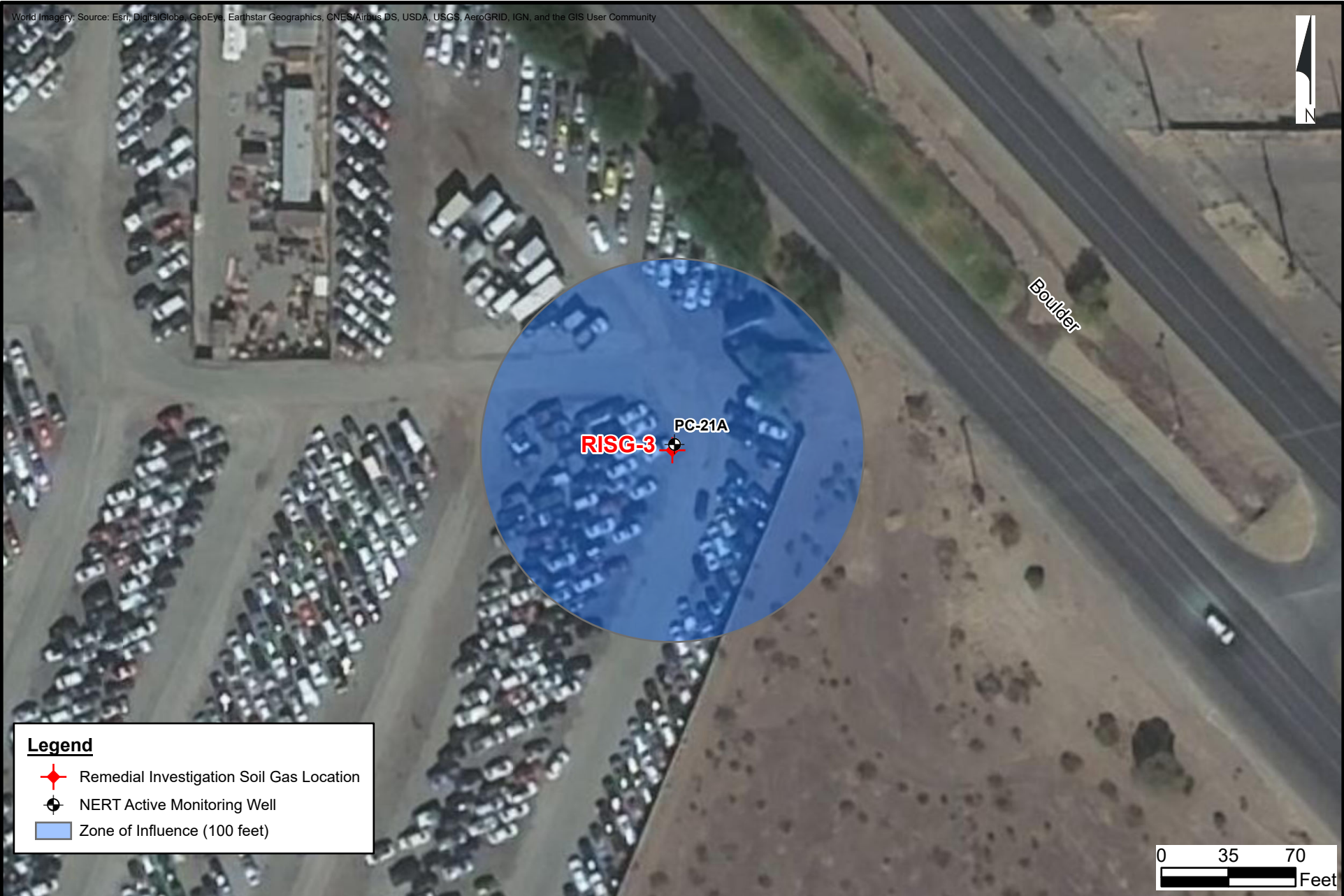
-  Remedial Investigation Soil Gas Location
-  NERT Active Monitoring Well
-  Zone of Influence (100 feet)






Soil Gas Location: RISG-2 and Zone of Influence
 Nevada Environmental Response Trust
 Henderson, Nevada

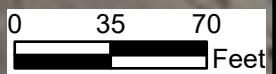
Figure
A-1.2

Drafter: GM Date: 4/20/2021 Contract Number: 1690020169-007 Approved: Revised:



Legend

-  Remedial Investigation Soil Gas Location
-  NERT Active Monitoring Well
-  Zone of Influence (100 feet)






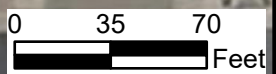
Soil Gas Location: RISG-3 and Zone of Influence
 Nevada Environmental Response Trust
 Henderson, Nevada

Figure
A-1.3



Legend

-  Remedial Investigation Soil Gas Location
-  NERT Active Monitoring Well
-  Zone of Influence (100 feet)






Soil Gas Location: RISG-4 and Zone of Influence
 Nevada Environmental Response Trust
 Henderson, Nevada

Figure
A-1.4



Legend

-  Remedial Investigation Soil Gas Location
-  NERT Active Monitoring Well
-  Zone of Influence (100 feet)



Soil Gas Location: RISG-5 and Zone of Influence
Nevada Environmental Response Trust
Henderson, Nevada

Figure

A-1.5

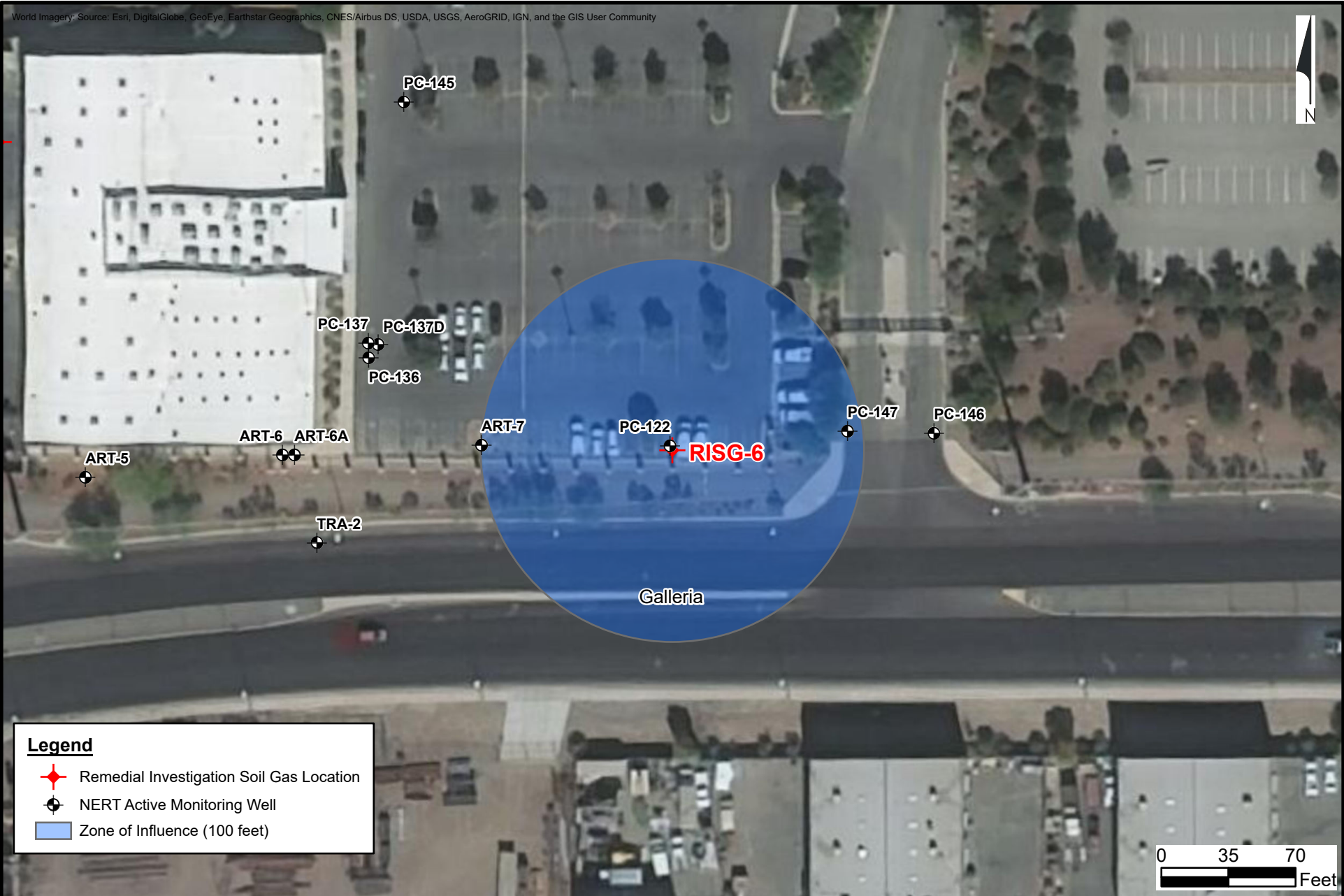
Drafter: GM

Date: 4/20/2021




Contract Number: 1690020169-007

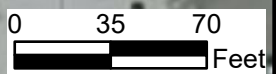
Approved:

Revised:



Legend

-  Remedial Investigation Soil Gas Location
-  NERT Active Monitoring Well
-  Zone of Influence (100 feet)



Soil Gas Location: RISG-6 and Zone of Influence
 Nevada Environmental Response Trust
 Henderson, Nevada

Figure
A-1.6



Legend

- Red crosshair: Remedial Investigation Soil Gas Location
- Black circle with dot: NERT Active Monitoring Well
- Blue circle: Zone of Influence (100 feet)



Soil Gas Location: RISG-7 and Zone of Influence
Nevada Environmental Response Trust
Henderson, Nevada

Figure
A-1.7

Drafter: GM

Date: 4/20/2021

Contract Number: 1690020169-007

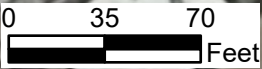
Approved:

Revised:



Legend

- Red crosshair: Remedial Investigation Soil Gas Location
- Black dot with circle: NERT Active Monitoring Well
- Blue circle: Zone of Influence (100 feet)






Soil Gas Location: RISG-8 and Zone of Influence
Nevada Environmental Response Trust
Henderson, Nevada

Figure
A-1.8

Drafter: GM Date: 4/20/2021 Contract Number: 1690020169-007 Approved: Revised:



Legend

-  Remedial Investigation Soil Gas Location
-  NERT Active Monitoring Well
-  Zone of Influence (100 feet)



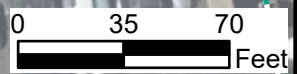
Soil Gas Location: RISG-9 and Zone of Influence
 Nevada Environmental Response Trust
 Henderson, Nevada

Figure
A-1.9



Legend

- Remedial Investigation Soil Gas Location
- NERT Active Monitoring Wells
- NERT Off-Site Study Area
- Sale Parcel Boundary
- Operable Units
- Zone of Influence (100 feet)






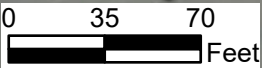
Soil Gas Location: RISG-27 and Zone of Influence
 Nevada Environmental Response Trust
 Henderson, Nevada

Figure
A-1.10



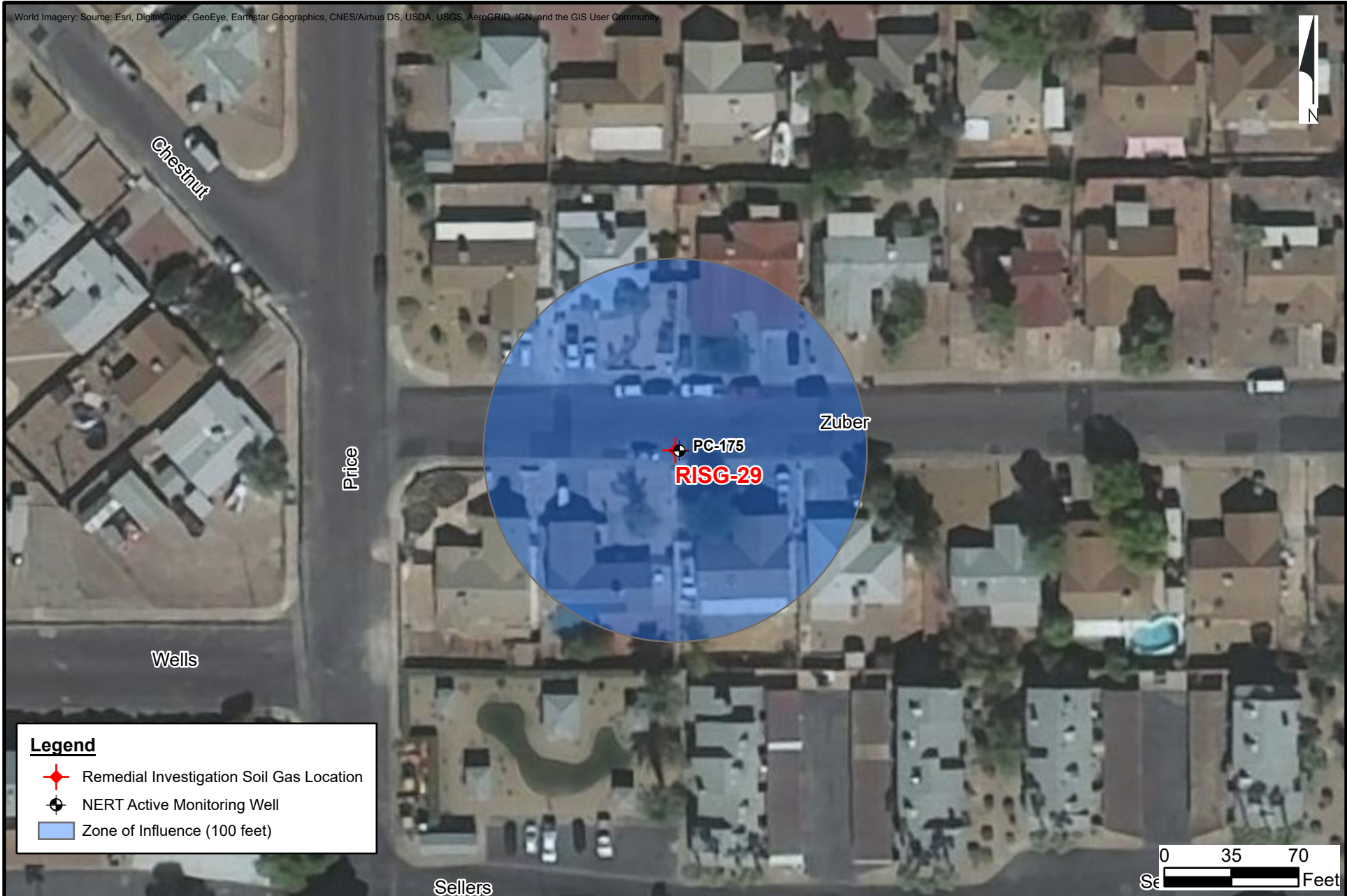
Legend

-  Remedial Investigation Soil Gas Location
-  NERT Active Monitoring Well
-  Zone of Influence (100 feet)






Soil Gas Location: RISG-28 and Zone of Influence
 Nevada Environmental Response Trust
 Henderson, Nevada

Figure
A-1.11



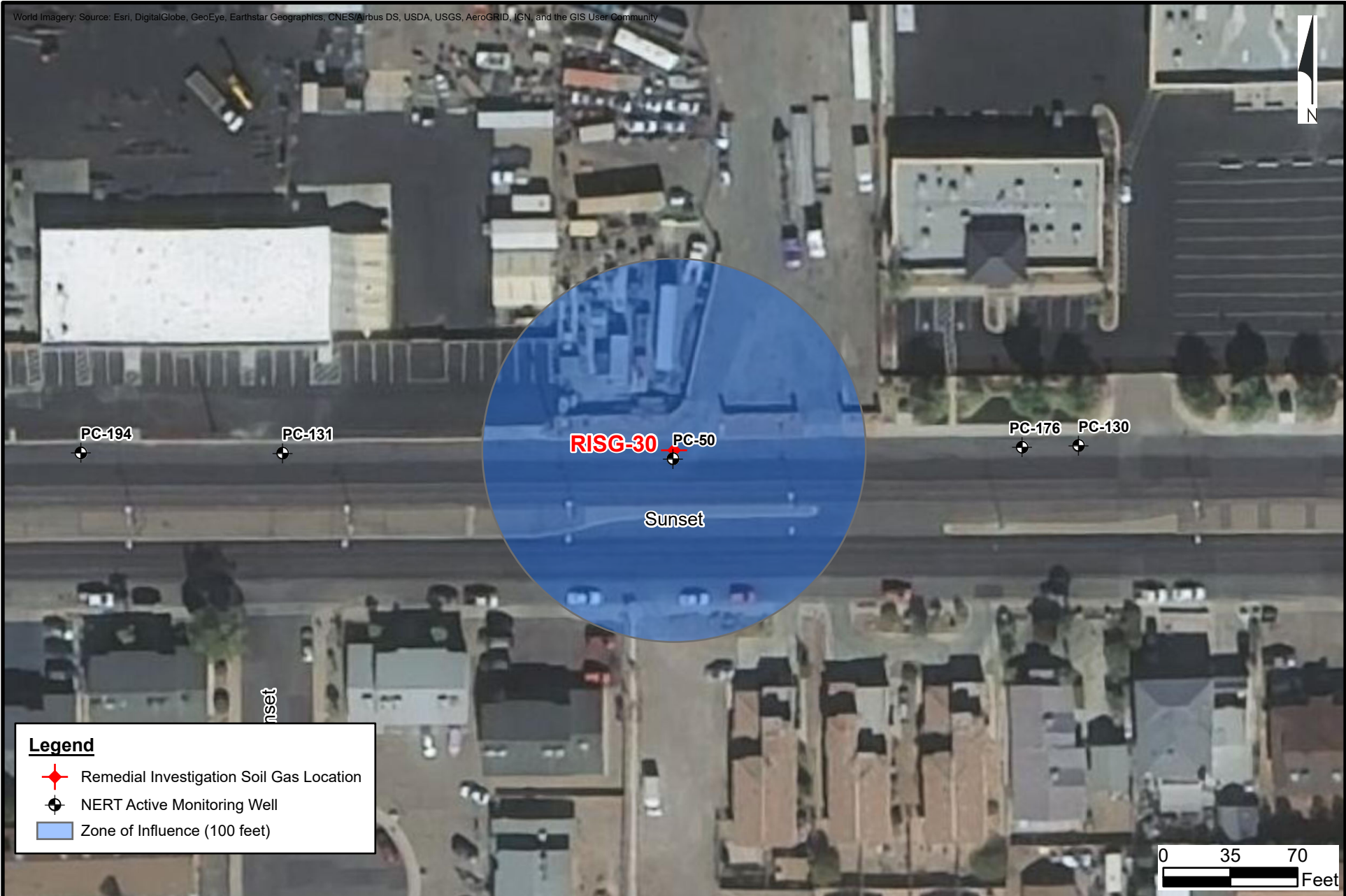
Legend

-  Remedial Investigation Soil Gas Location
-  NERT Active Monitoring Well
-  Zone of Influence (100 feet)






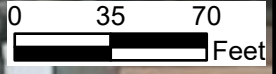
Soil Gas Location: RISG-29 and Zone of Influence
 Nevada Environmental Response Trust
 Henderson, Nevada

Figure
A-1.12



Legend

-  Remedial Investigation Soil Gas Location
-  NERT Active Monitoring Well
-  Zone of Influence (100 feet)



Soil Gas Location: RISG-30 and Zone of Influence
 Nevada Environmental Response Trust
 Henderson, Nevada

Figure
A-1.13

**TABLE A-2. Soil Gas Sampling Zone of Influence Descriptions, Phase 3 RI Modification No. 9
Nevada Environmental Response Trust Site
Henderson, Nevada**

| LOCATION ID ^[1] | FIGURE # | DESCRIPTION OF STRUCTURES WITHIN ZONE OF INFLUENCE |
|-----------------------------------|-----------------|--|
| RISG-52 | A-2.1 | Industrial building; utility vehicle parking on asphalt; concrete storm water drainage ditch. |
| RISG-53 | A-2.2 | Street utilities; asphalt street; one industrial building to the west with asphalt parking. |
| RISG-54 | A-2.3 | One monitoring well (PC-123); street utilities; asphalt street; one industrial building to the north; asphalt parking lot. |
| RISG-55 | A-2.4 | One monitoring well (PC-128); street utilities; asphalt street; dirt lot to the north. |
| RISG-56 | A-2.5 | One monitoring well (PC-124); street utilities; asphalt street; newly paved asphalt parking (to the north not shown on the aerial). |
| RISG-57 | A-2.6 | Street utilities; asphalt street; three apartment housing structures with asphalt parking and grass lots. |
| RISG-58 | A-2.7 | Street utilities; asphalt street; eleven housing structures with concrete driveways and gravel covered lots. |
| RISG-59 | A-2.8 | Street utilities; asphalt street; eleven housing structures with concrete driveways and gravel covered lots. |
| RISG-60 | A-2.9 | Street utilities; asphalt street; four housing structures with concrete driveways and gravel covered lots. |
| RISG-61 | A-2.10 | One monitoring well (PC-28); street utilities; asphalt street; two housing structures with concrete driveways and gravel covered lots; elementary school building and asphalt paving to the south; dirt lot to the west. |
| RISG-62 | A-2.11 | Street utilities; asphalt street; two housing structures with concrete driveways and gravel covered lots; dirt lot to the west. |
| RISG-63 | A-2.12 | Street utilities; asphalt street; eleven housing structures with concrete driveways and gravel covered lots. |
| RISG-64 | A-2.13 | Street utilities; asphalt street; eleven housing structures with concrete driveways and gravel covered lots. |
| RISG-65 | A-2.14 | Street utilities; asphalt street; three housing structures with concrete driveways and gravel covered lots; asphalt parking. |
| RISG-66 | A-2.15 | Street utilities; asphalt street; eleven housing structures with concrete driveways and gravel covered lots. |
| RISG-67 | A-2.16 | Street utilities; asphalt street; nine housing structures with concrete driveways and gravel covered lots. |
| RISG-68 | A-2.17 | Street utilities; asphalt street; six housing structures with concrete driveways and gravel covered lots. |
| RISG-69 | A-2.18 | Two monitoring wells (PC-66 and PC-192); street utilities; asphalt street; seven housing structures with concrete driveways and gravel covered lots. |
| RISG-70 | A-2.19 | Street utilities; asphalt street; eight housing structures with concrete driveways and gravel covered lots. |
| RISG-71 | A-2.20 | Street utilities; asphalt street; four housing structures with concrete driveways and gravel covered lots. |
| RISG-72 | A-2.21 | Street utilities; asphalt street; seven housing structures with concrete driveways and gravel covered lots. |
| RISG-73 | A-2.22 | Street utilities; asphalt street; eight housing structures with concrete driveways and gravel covered lots. |
| RISG-74 | A-2.23 | Street utilities; asphalt street; six housing structures with concrete driveways and gravel covered lots. |
| RISG-75 | A-2.24 | Street utilities; asphalt street; five housing structures with concrete driveways and gravel covered lots. |
| RISG-76 | A-2.25 | One monitoring well (PC-187R); automobile salvage yard on asphalt; construction employee dirt parking lot. |
| RISG-77 | A-2.26 | Street utilities; asphalt street; two housing structures with concrete driveways; asphalt parking lot. |

**TABLE A-2. Soil Gas Sampling Zone of Influence Descriptions, Phase 3 RI Modification No. 9
Nevada Environmental Response Trust Site
Henderson, Nevada**

| LOCATION ID ^[1] | FIGURE # | DESCRIPTION OF STRUCTURES WITHIN ZONE OF INFLUENCE |
|-----------------------------------|-----------------|---|
| RISG-78 | A-2.27 | Street utilities; asphalt street; four mobile homes with dirt parking lot; dirt lot to the north. |

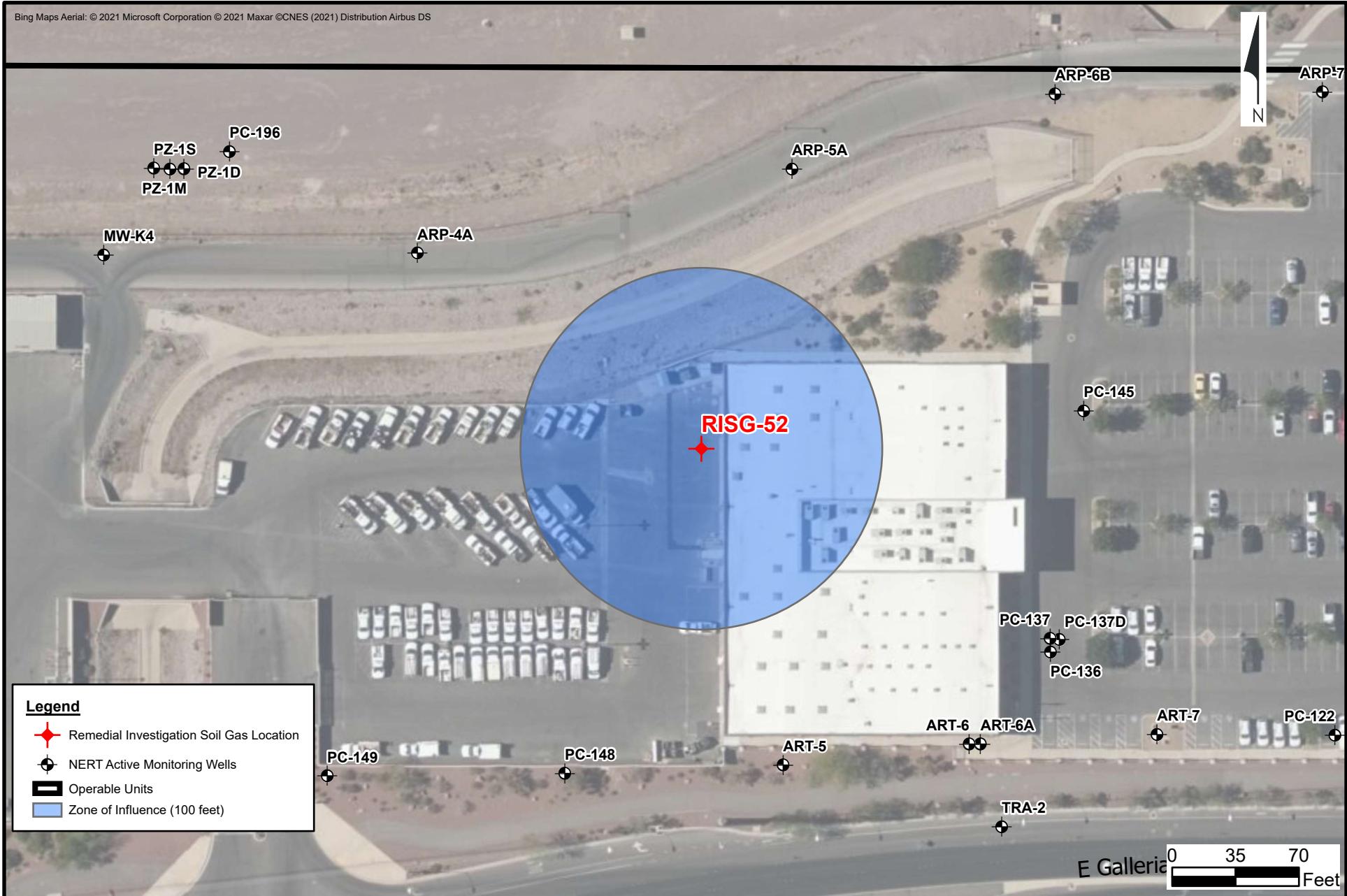
Notes:

RI = Remedial Investigation

[1] This table only includes the new soil gas probes installed in Phase 3 RI Modification No. 9. Soil gas probes sampled in Phase 2 RI Modification No. 11 (see Table A-1) were re-sampled in Phase 3 RI Modification No. 9; these locations are not included in this table.

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ATTACHMENT A-2
SOIL GAS LOCATION ZONE OF INFLUENCE FIGURES, PHASE 3 RI
MODIFICATION NO. 9



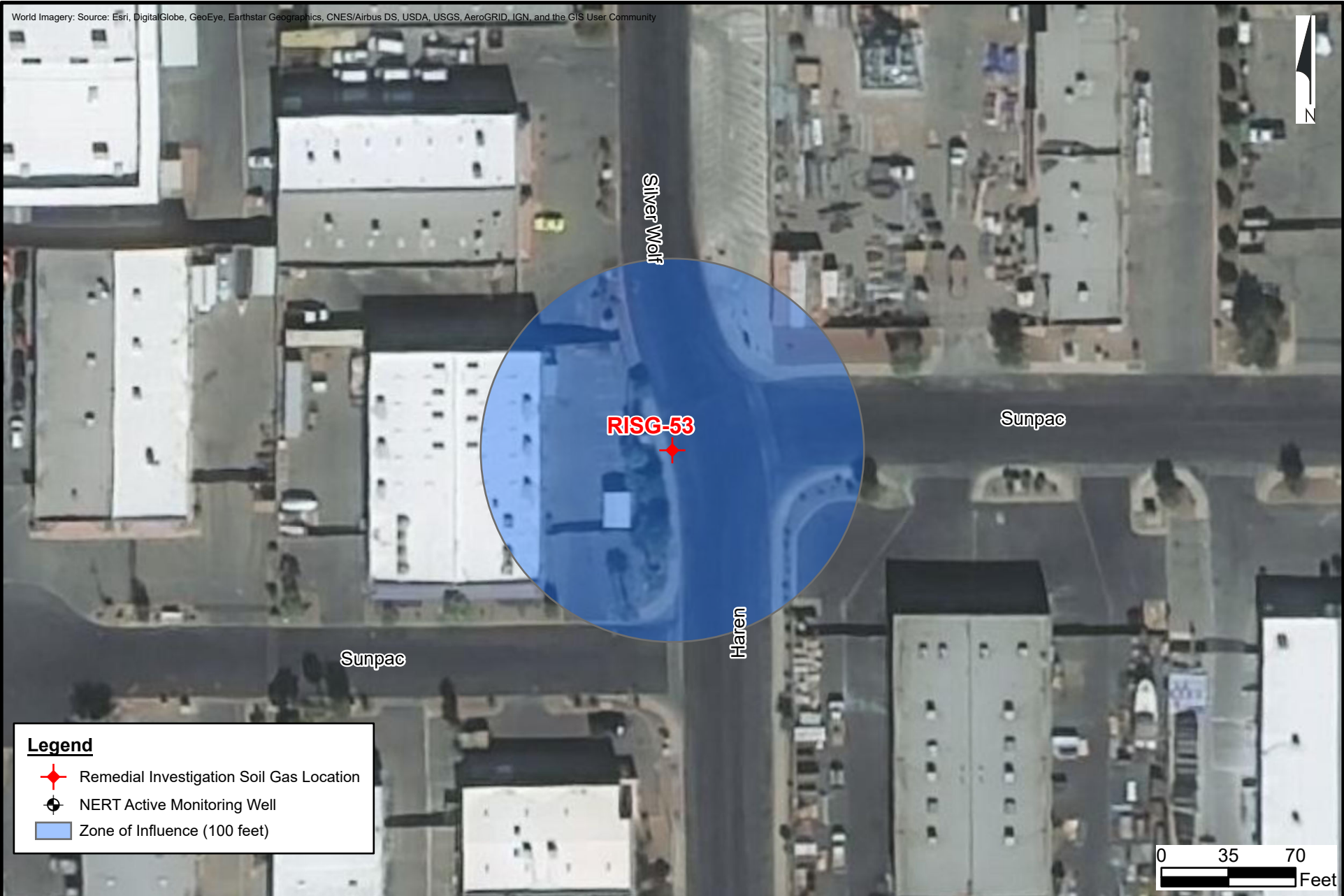
Legend

- ★ Remedial Investigation Soil Gas Location
- NERT Active Monitoring Wells
- ▭ Operable Units
- Zone of Influence (100 feet)






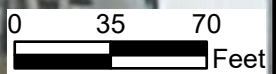
Soil Gas Location: RISG-52 and Zone of Influence
 Nevada Environmental Response Trust
 Henderson, Nevada

Figure
A-2.1



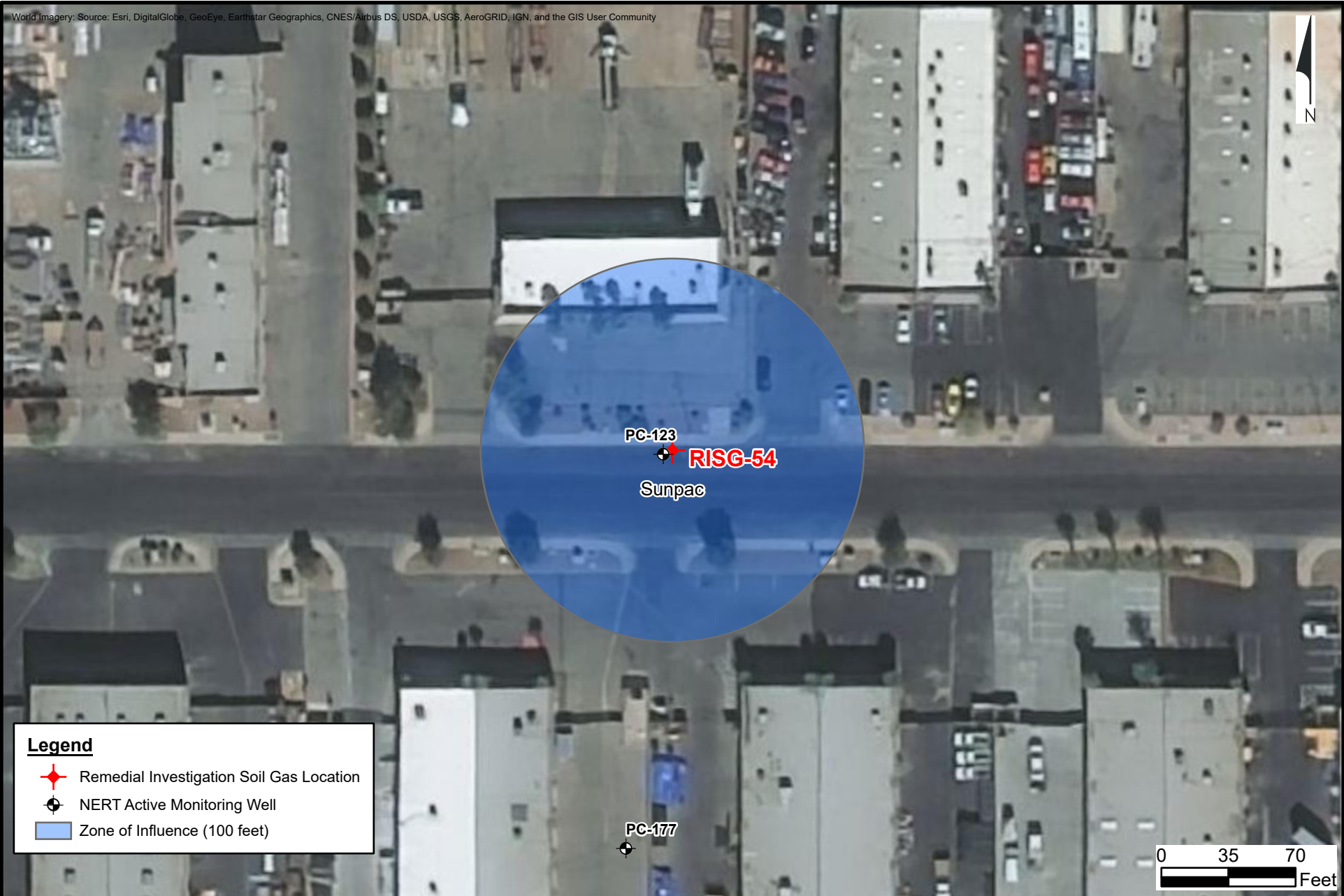
Legend

-  Remedial Investigation Soil Gas Location
-  NERT Active Monitoring Well
-  Zone of Influence (100 feet)



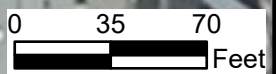
Soil Gas Location: RISG-53 and Zone of Influence
 Nevada Environmental Response Trust
 Henderson, Nevada

Figure
A-2.2



Legend

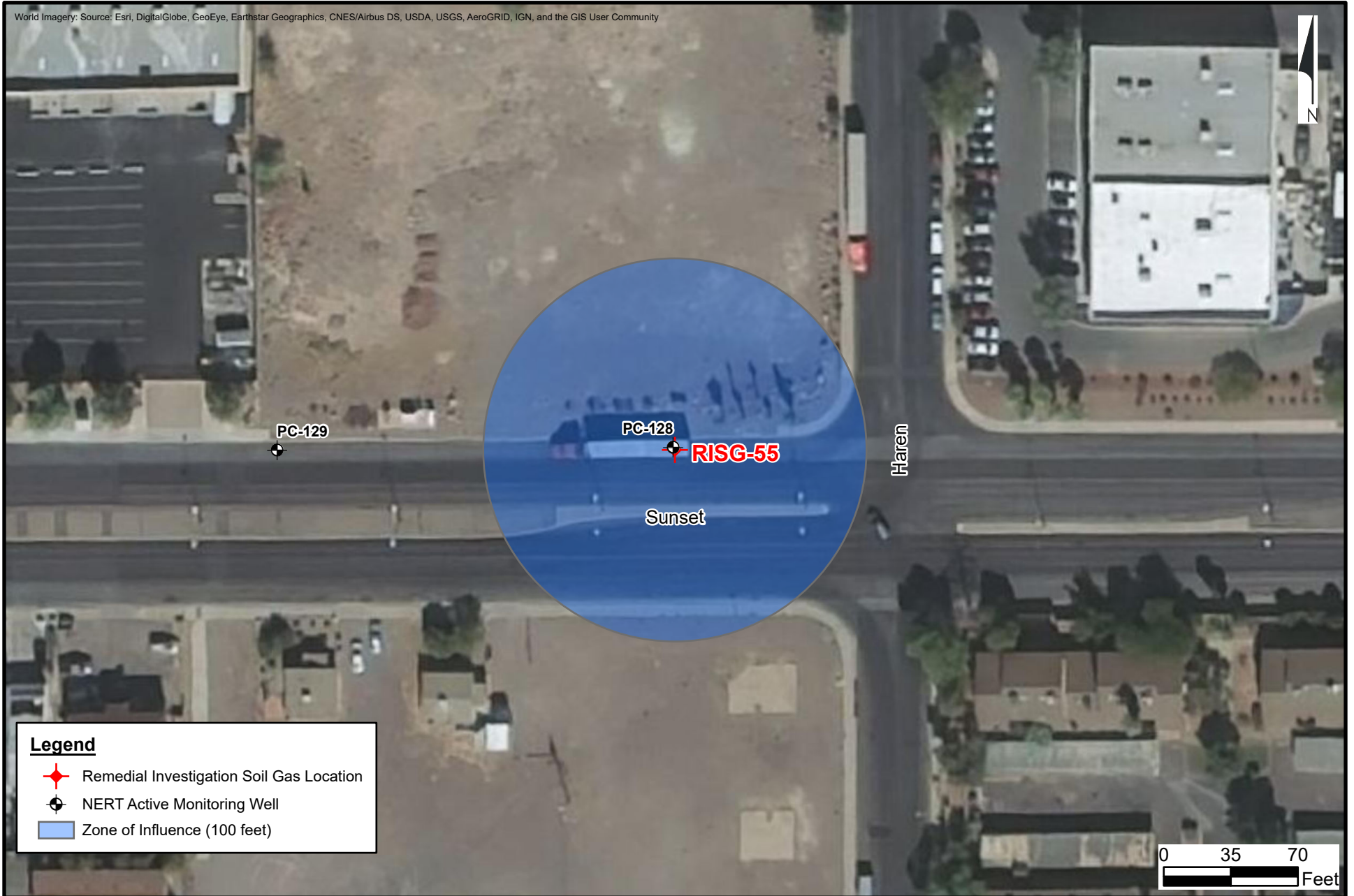
- Red crosshair: Remedial Investigation Soil Gas Location
- Black crosshair: NERT Active Monitoring Well
- Blue circle: Zone of Influence (100 feet)






Soil Gas Location: RISG-54 and Zone of Influence
Nevada Environmental Response Trust
Henderson, Nevada

Figure
A-2.3

Drafter: GM Date: 4/20/2021 Contract Number: 1690020169-007 Approved: Revised:



Legend

-  Remedial Investigation Soil Gas Location
-  NERT Active Monitoring Well
-  Zone of Influence (100 feet)



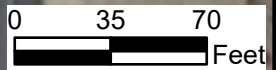
Soil Gas Location: RISG-55 and Zone of Influence
 Nevada Environmental Response Trust
 Henderson, Nevada

Figure
A-2.4



Legend

- Red diamond symbol: Remedial Investigation Soil Gas Location
- Black circle with crosshair symbol: NERT Active Monitoring Well
- Blue square symbol: Zone of Influence (100 feet)






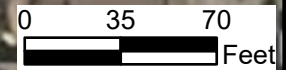
Soil Gas Location: RISG-56 and Zone of Influence
Nevada Environmental Response Trust
Henderson, Nevada

Figure
A-2.5



Legend

-  Remedial Investigation Soil Gas Location
-  NERT Active Monitoring Well
-  Zone of Influence (100 feet)






Soil Gas Location: RISG-57 and Zone of Influence
 Nevada Environmental Response Trust
 Henderson, Nevada

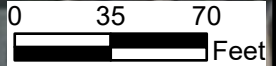
Figure
A-2.6

Drafter: GM Date: 4/20/2021 Contract Number: 1690020169-007 Approved: _____ Revised: _____



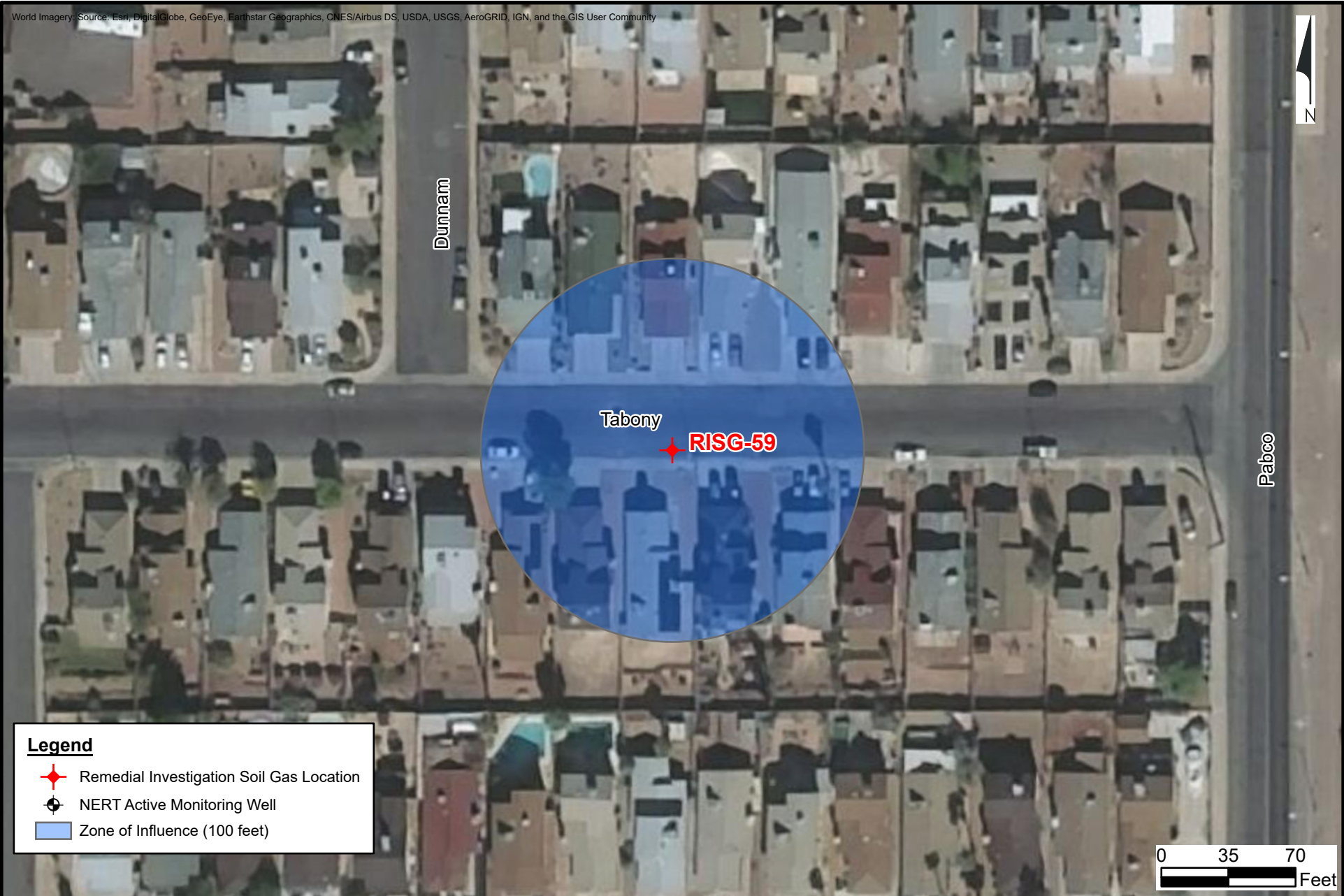
Legend

-  Remedial Investigation Soil Gas Location
-  NERT Active Monitoring Well
-  Zone of Influence (100 feet)






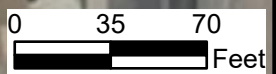
Soil Gas Location: RISG-58 and Zone of Influence
 Nevada Environmental Response Trust
 Henderson, Nevada

Figure
A-2.7



Legend

-  Remedial Investigation Soil Gas Location
-  NERT Active Monitoring Well
-  Zone of Influence (100 feet)



Soil Gas Location: RISG-59 and Zone of Influence
 Nevada Environmental Response Trust
 Henderson, Nevada

Figure
A-2.8



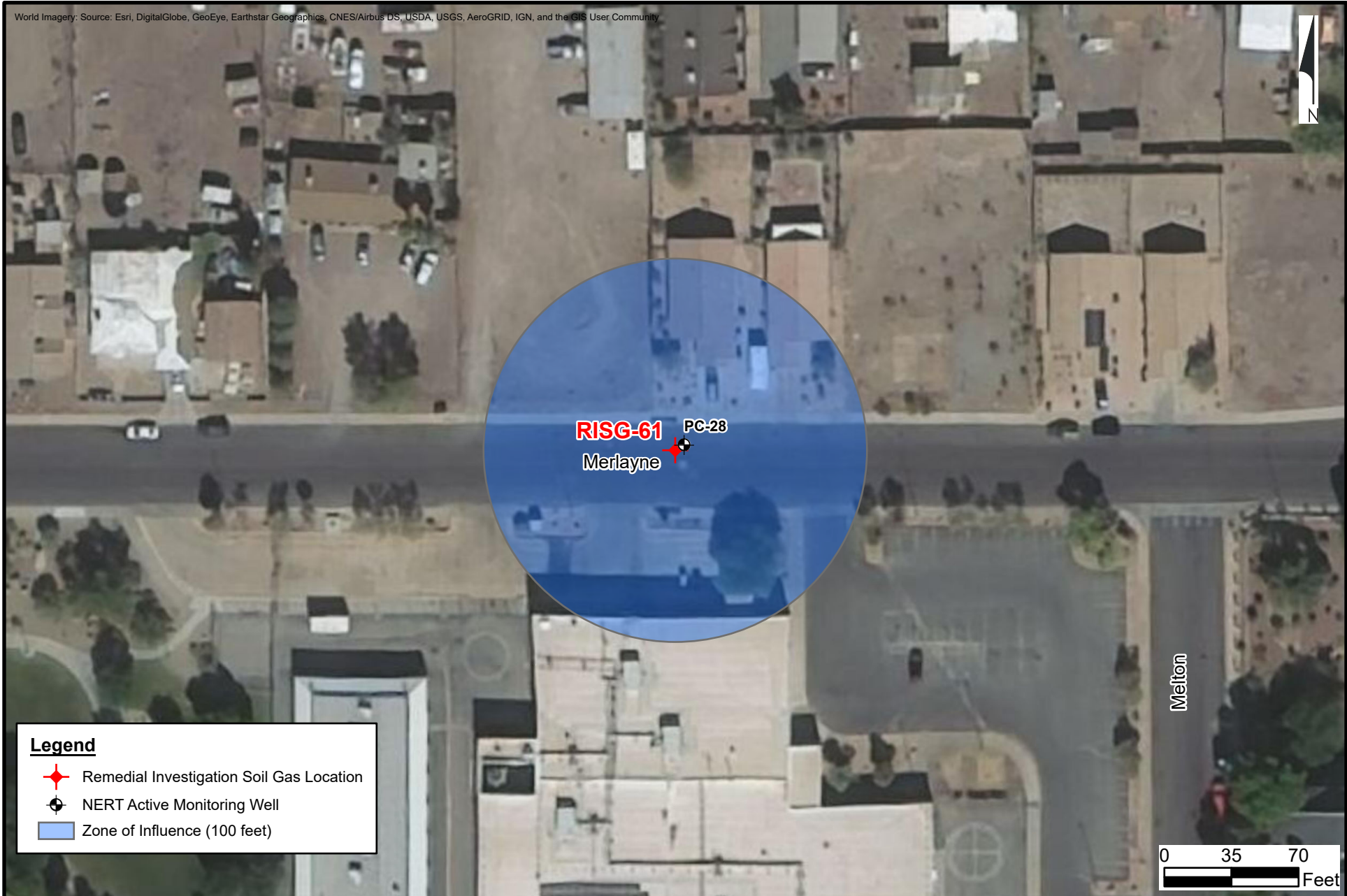
Legend

- ★ Remedial Investigation Soil Gas Location
- ⊕ NERT Active Monitoring Well
- Zone of Influence (100 feet)






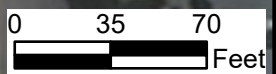
Soil Gas Location: RISG-60 and Zone of Influence
Nevada Environmental Response Trust
Henderson, Nevada

Figure
A-2.9



Legend

-  Remedial Investigation Soil Gas Location
-  NERT Active Monitoring Well
-  Zone of Influence (100 feet)






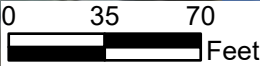
Soil Gas Location: RISG-61 and Zone of Influence
 Nevada Environmental Response Trust
 Henderson, Nevada

Figure
A-2.10



Legend

-  Remedial Investigation Soil Gas Location
-  NERT Active Monitoring Well
-  Zone of Influence (100 feet)



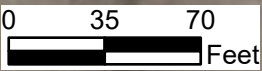
Soil Gas Location: RISG-62 and Zone of Influence
 Nevada Environmental Response Trust
 Henderson, Nevada

Figure
A-2.11



Legend

- Red star symbol: Remedial Investigation Soil Gas Location
- Black circle with dot symbol: NERT Active Monitoring Well
- Blue circle: Zone of Influence (100 feet)






Soil Gas Location: RISG-63 and Zone of Influence
Nevada Environmental Response Trust
Henderson, Nevada

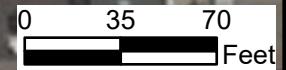
Figure
A-2.12

Drafter: GM Date: 4/20/2021 Contract Number: 1690020169-007 Approved: Revised:



Legend

-  Remedial Investigation Soil Gas Location
-  NERT Active Monitoring Well
-  Zone of Influence (100 feet)



Soil Gas Location: RISG-64 and Zone of Influence
Nevada Environmental Response Trust
Henderson, Nevada

Figure
A-2.13

Drafter: GM

Date: 4/20/2021

Contract Number: 1690020169-007

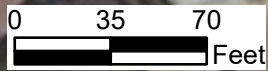
Approved:

Revised:



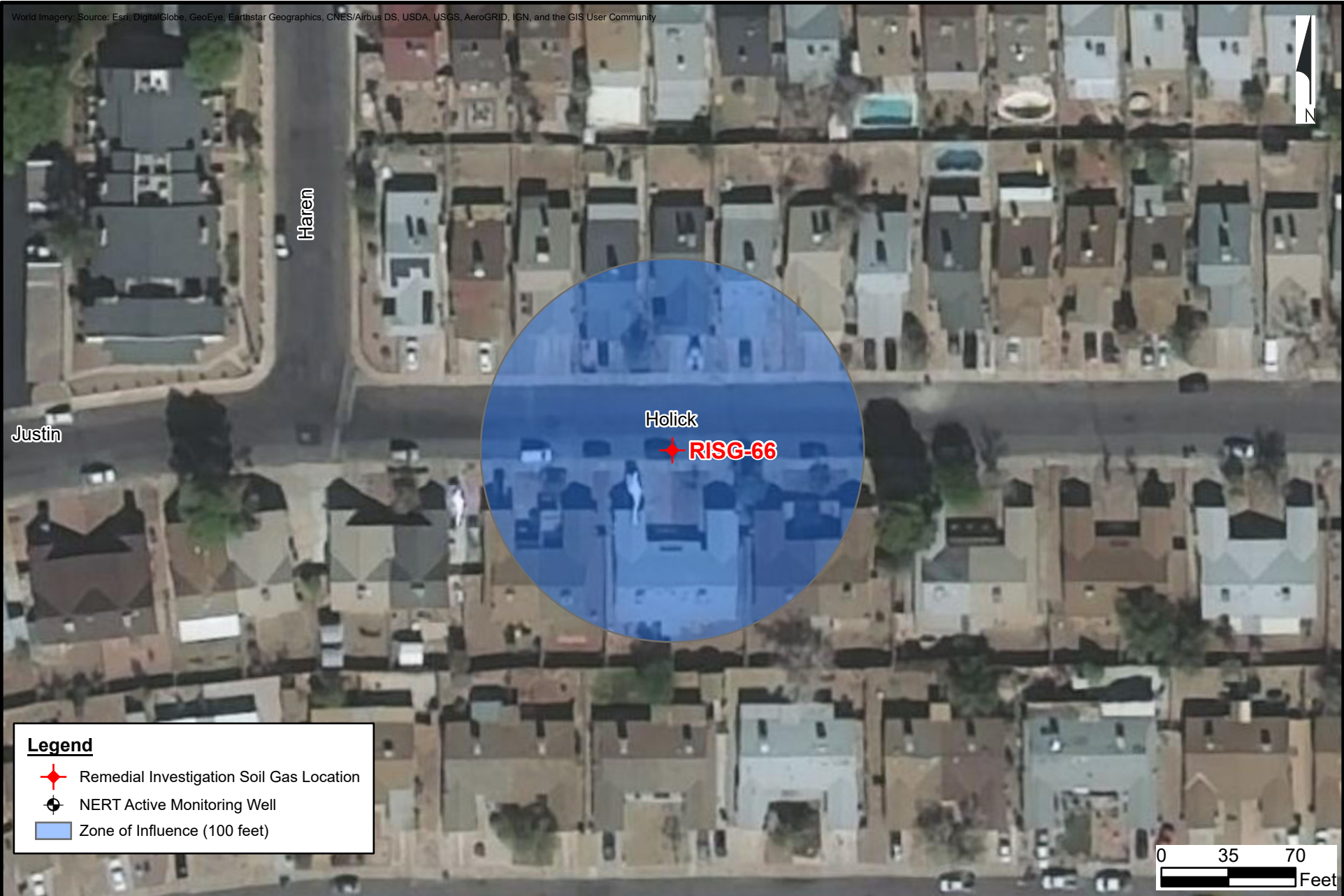
Legend

- ★ Remedial Investigation Soil Gas Location
- NERT Active Monitoring Well
- Zone of Influence (100 feet)






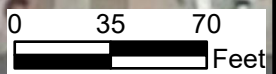
Soil Gas Location: RISG-65 and Zone of Influence
Nevada Environmental Response Trust
Henderson, Nevada

Figure
A-2.14



Legend

-  Remedial Investigation Soil Gas Location
-  NERT Active Monitoring Well
-  Zone of Influence (100 feet)



Soil Gas Location: RISG-66 and Zone of Influence
 Nevada Environmental Response Trust
 Henderson, Nevada

Figure
A-2.15

Drafter: GM Date: 4/20/2021 Contract Number: 1690020169-007 Approved: Revised:



Soil Gas Location: RISG-67 and Zone of Influence
Nevada Environmental Response Trust
Henderson, Nevada

Figure
A-2.16

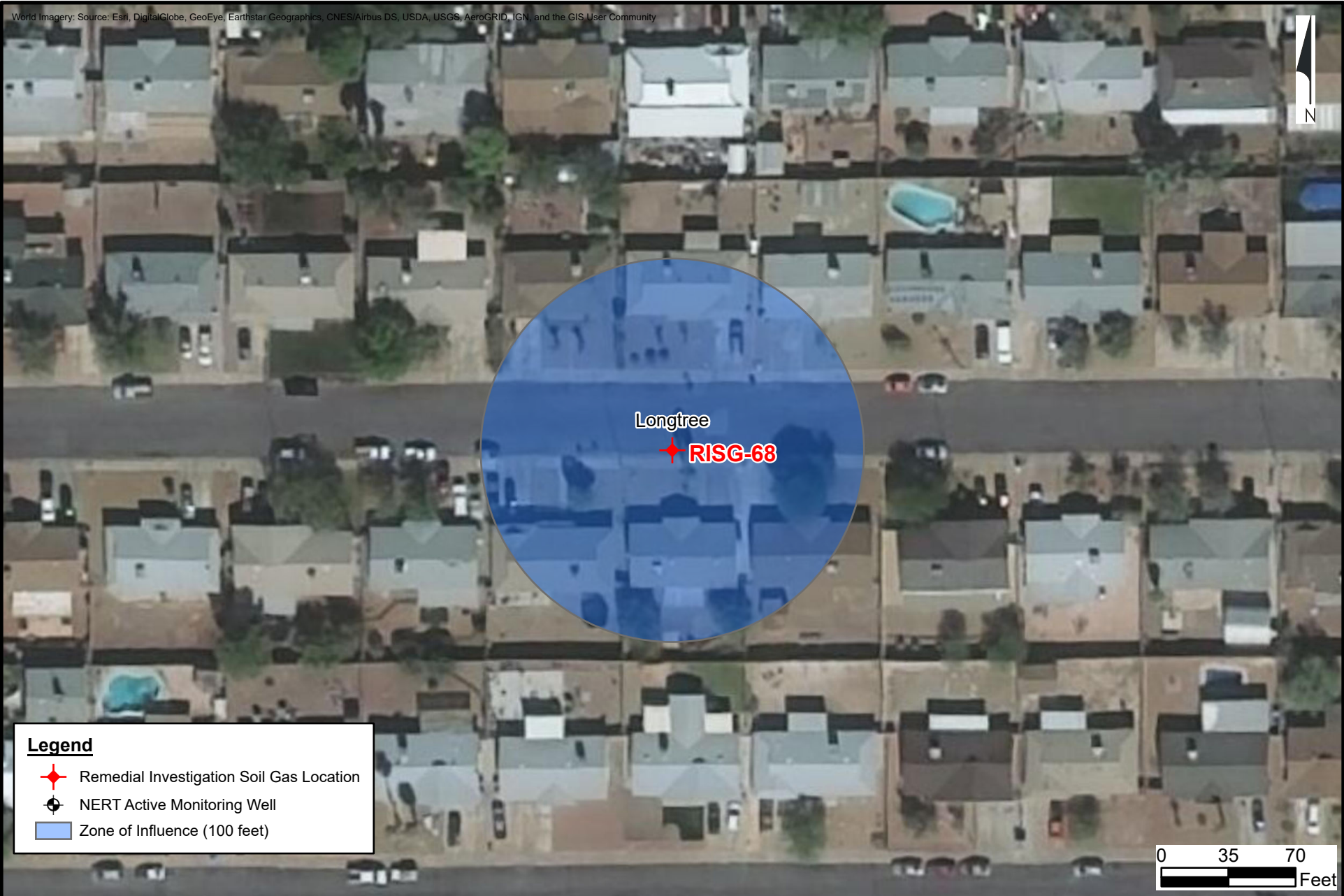
Drafter: GM

Date: 5/3/2021




Contract Number: 1690020169-007

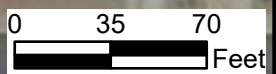
Approved:

Revised:



Legend

-  Remedial Investigation Soil Gas Location
-  NERT Active Monitoring Well
-  Zone of Influence (100 feet)






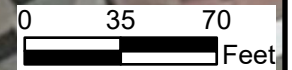
Soil Gas Location: RISG-68 and Zone of Influence
 Nevada Environmental Response Trust
 Henderson, Nevada

Figure
A-2.17



Legend

-  Remedial Investigation Soil Gas Location
-  NERT Active Monitoring Well
-  Zone of Influence (100 feet)



Soil Gas Location: RISG-69 and Zone of Influence
 Nevada Environmental Response Trust
 Henderson, Nevada

Figure
A-2.18

Drafter: GM

Date: 5/3/2021




Contract Number: 1690020169-007

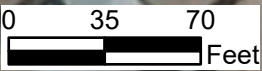
Approved:

Revised:



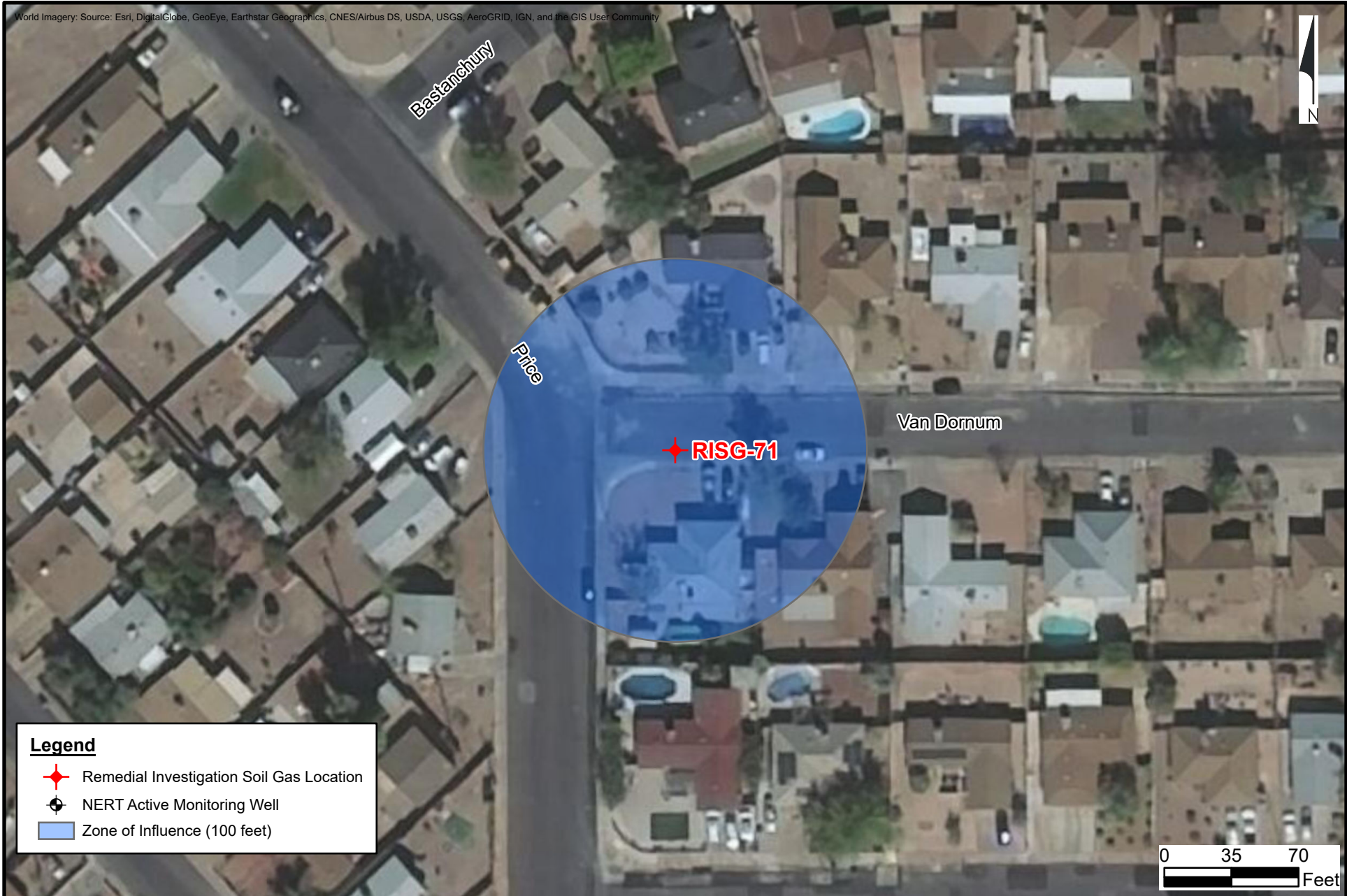
Legend

-  Remedial Investigation Soil Gas Location
-  NERT Active Monitoring Well
-  Zone of Influence (100 feet)






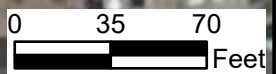
Soil Gas Location: RISG-70 and Zone of Influence
 Nevada Environmental Response Trust
 Henderson, Nevada

Figure
A-2.19



Legend

-  Remedial Investigation Soil Gas Location
-  NERT Active Monitoring Well
-  Zone of Influence (100 feet)



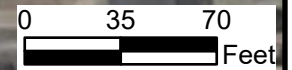
Soil Gas Location: RISG-71 and Zone of Influence
 Nevada Environmental Response Trust
 Henderson, Nevada

Figure
A-2.20



Legend

- ★ Remedial Investigation Soil Gas Location
- ⊕ NERT Active Monitoring Well
- Zone of Influence (100 feet)






Soil Gas Location: RISG-72 and Zone of Influence
Nevada Environmental Response Trust
Henderson, Nevada

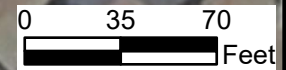
Figure
A-2.21



Legend

-  Remedial Investigation Soil Gas Location
-  NERT Active Monitoring Well
-  Zone of Influence (100 feet)

Boulder



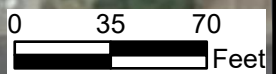
Soil Gas Location: RISG-73 and Zone of Influence
 Nevada Environmental Response Trust
 Henderson, Nevada

Figure
A-2.22



Legend

- Remedial Investigation Soil Gas Location
- NERT Active Monitoring Well
- Zone of Influence (100 feet)



Soil Gas Location: RISG-74 and Zone of Influence
Nevada Environmental Response Trust
Henderson, Nevada

Figure
A-2.23

Close Ave

Spague St





Zuber Ave

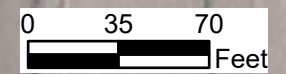
Paboo Rd

RISG-75



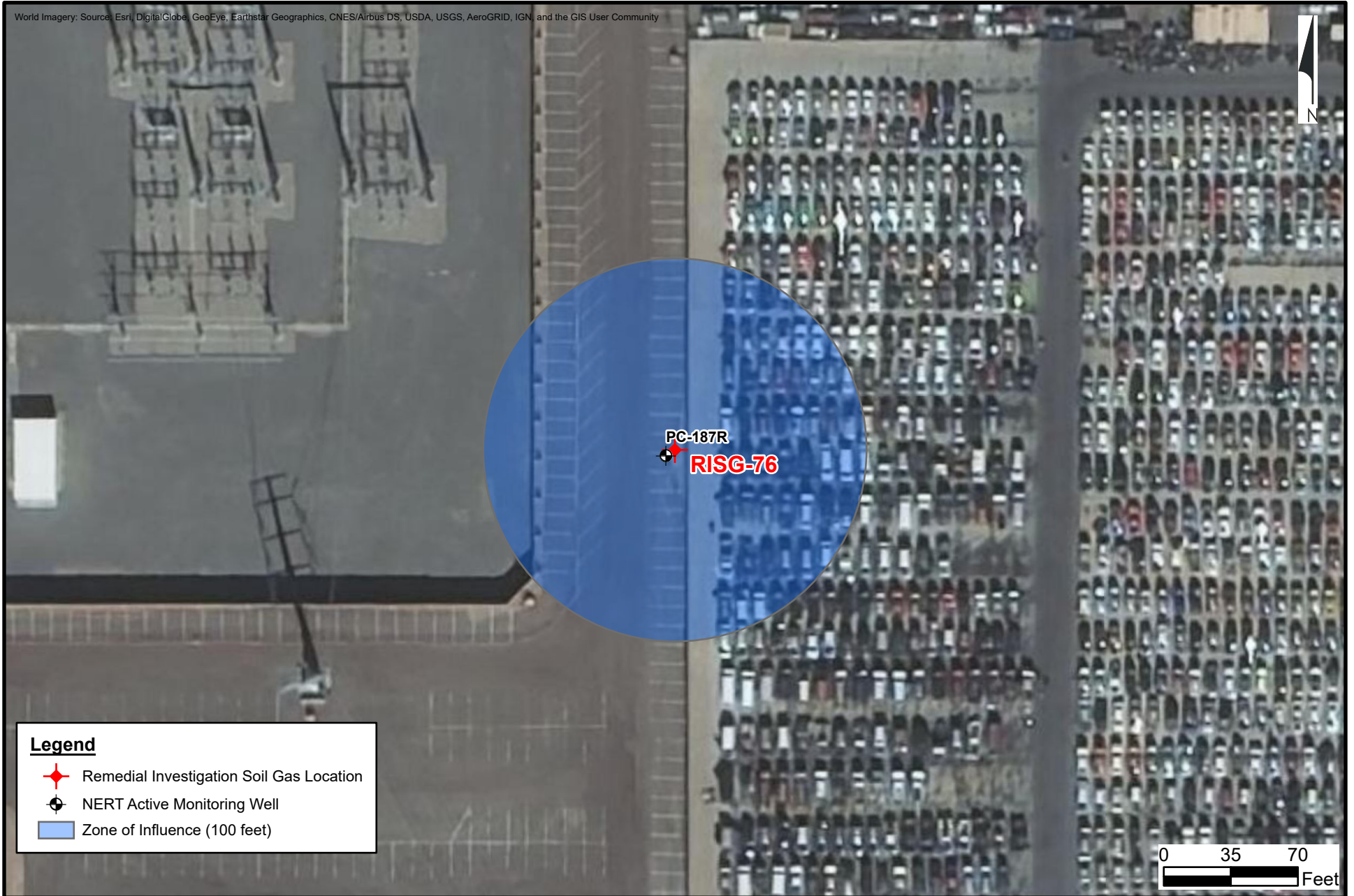
Legend

-  Remedial Investigation Soil Gas Location
-  NERT Off-Site Study Area
-  Eastside Sub-Area
-  Zone of Influence (100 feet)



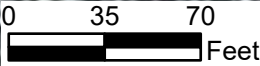
Soil Gas Location: RISG-75 and Zone of Influence
 Nevada Environmental Response Trust
 Henderson, Nevada

Figure
A-2.24



Legend

- ★ Remedial Investigation Soil Gas Location
- ⊕ NERT Active Monitoring Well
- Zone of Influence (100 feet)






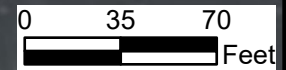
Soil Gas Location: RISG-76 and Zone of Influence
Nevada Environmental Response Trust
Henderson, Nevada

Figure
A-2.25



Legend

-  Remedial Investigation Soil Gas Location
-  NERT Active Monitoring Well
-  Zone of Influence (100 feet)



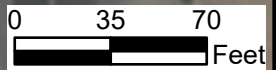
Soil Gas Location: RISG-77 and Zone of Influence
 Nevada Environmental Response Trust
 Henderson, Nevada

Figure
A-2.26



Legend

- ★ Remedial Investigation Soil Gas Location
- NERT Active Monitoring Well
- Zone of Influence (100 feet)



Soil Gas Location: RISG-78 and Zone of Influence
Nevada Environmental Response Trust
Henderson, Nevada

Figure
A-2.27

Baseline Health Risk Assessment
for OU-2 Soil Gas and Groundwater
Nevada Environmental Response Trust
Henderson, Nevada

APPENDIX B
DATA VALIDATION SUMMARY REPORTS AND TABLES – SOIL GAS
(PROVIDED ELECTRONICALLY)

Baseline Health Risk Assessment
for OU-2 Soil Gas and Groundwater
Nevada Environmental Response Trust
Henderson, Nevada

APPENDIX C
DATA VALIDATION SUMMARY REPORTS AND TABLES – SHALLOW
GROUNDWATER (PROVIDED ELECTRONICALLY)

Baseline Health Risk Assessment
for OU-2 Soil Gas and Groundwater
Nevada Environmental Response Trust
Henderson, Nevada

APPENDIX D
SOIL GAS BHRA DATA SET (PROVIDED ELECTRONICALLY)

Attachment D-1

Processing of OU-2 Soil Gas BHRA Data Set

This attachment presents the details about the data processing steps for the soil gas baseline health risk assessment (BHRA) data set for the western portion of Operable Unit 2 (OU-2).

As a first step, the analytical results of soil gas samples collected within the western portion of OU-2 as part of the 2008 Phase B Soil Gas Investigation (ENSR Corporation [ENSR] 2008a), the 2015 Phase 1 Remedial Investigation (RI) (ENVIRON 2014), the 2019 Phase 2 RI Modification No. 11 (Ramboll 2018), and the 2019-2020 Phase 3 RI Modification No. 9 (Ramboll 2019) were extracted from the NERT project database maintained by Ramboll on behalf of the Trust. These data are also included in the corresponding data validation summary reports (DVSRs) submitted to the Nevada Division of Environmental Protection (NDEP) (ENSR 2008b, Ramboll 2017, 2020, 2021). Five Phase B soil gas samples collected at five locations (SG01, SG02, SG03, SG04, and SG05) within the former Parcel A were excluded from this BHRA because the parcel has a no further action (NFA) determination for the vapor intrusion pathway and the soil gas data collected in this area are not needed in the BHRA for the western portion of OU-2.

After identifying the preliminary set of soil gas data for the BHRA, an initial task was implemented to 1) identify and correct inconsistencies in data entries and 2) create additional fields to support data management and interpretation. No change was made to a datum without first understanding the issue and the steps necessary to correct the issue. As needed, the sampling plan, laboratory reports, DVSRs, and other supporting documents were reviewed. The following steps of data processing were completed:

- Standardize the Chemical Abstract Service (CAS) registry number for m,p-xylene from 136777-61-2 to 179601-23-1;
- Fix the soil gas data collected from the 2008 Phase B Soil Gas Investigation and associated with field and laboratory blank contamination that were originally qualified as nondetects based on the NDEP guidance at that time. In accordance with the current NDEP guidance, if there were detections between the sample quantitation limit (SQL) and the practical quantitation limit (PQL) for samples with blank contamination, these data were changed from non-detected values (U qualified) to detected values (J qualified) at reported concentrations. Table B-2 summarizes the revisions of the 2008 soil gas data for blank contamination; and
- Calculate the data for total isomers for use in the BHRA. The purpose of this step is to generate the data in the same chemical form as the toxicity values. For example, the data for m,p-xylenes and o-xylene in the same sample were summed to calculate the data for xylenes (total) for which the toxicity values are reported; the data for cis-1,3-dichloropropene and trans-1,3-dichloropropene in the same sample were summed to calculate the data for 1,3-dichloropropene (total) for which the toxicity values are reported.

The OU-2 soil gas BHRA data set derived after the above data processing steps is presented in Appendix D, Table D-1. Table D-2 presents the isomer data used for the xylenes (total)

and 1,3-dichloropropene (total) calculation described above. Reason codes for qualification are included along with each qualified data point except for the calculated xylenes (total) and 1,3-dichloropropene (total) data as well as some records from the 2008 Phase B Soil Gas Investigation. The 2008 qualified soil gas data did not include reason codes for otherwise unqualified nondetects or detected values between the SQL and PQL.

Except for the calculated xylenes (total) and 1,3-dichloropropene (total) values, after standardizing the CAS number for m,p-xylene and revising the 2008 soil gas data in the Black Mountain Industrial (BMI) database for blank contamination based on Table B-2, all data from Tables D-1 and D-2 should 1:1 match the BMI database when joining on the following column pairs: sample_name / sample_id_field, report_cas_rn / cas_id, and report_unit_to use / result_units_raw.

References:

- ENSR Corporation (ENSR). 2008a. Phase B Source Area Investigation Work Plan, Soil Gas Survey, Tronox LLC Facility, Henderson, Nevada, March. NDEP approved March 26, 2008.
- ENSR. 2008b. Revised Draft Data Validation Summary Report, Phase B Source Area Investigation Soil Gas Survey, Tronox LLC Facility, Henderson, Nevada, October. NDEP approved October 20, 2008.
- ENVIRON. 2014. Remedial Investigation and Feasibility Study Work Plan, Revision 2, Nevada Environmental Response Trust Site, Henderson Nevada. June 19. NDEP approved July 2, 2014.
- Ramboll US Corporation (Ramboll). 2017. Data Validation Summary Report, Remedial Investigation Sampling Phase 1, Soil Gas Remediation Sampling, March 2015. September 14. NDEP approved January 25, 2018.
- Ramboll. 2018. RI Phase 2 Modification No. 11: Recommended Soil Gas Sampling Locations, Nevada Environmental Response Trust Site, Henderson, Nevada. May 23. NDEP approved June 21, 2018.
- Ramboll. 2019. Phase 3 Remedial Investigation (RI) Modification No. 9: Proposed Soil Gas Sampling in OU-1 and OU-2, Nevada Environmental Response Trust Site, Henderson, Nevada. October 7. NDEP approved October 14, 2019.
- Ramboll. 2020. Data Validation Summary Report, Remedial Investigation Sampling Phase 2, March 2018 through March 2019, Revision 1, Nevada Environmental Response Trust, Henderson, Nevada. February 14. NDEP approved April 9, 2020.
- Ramboll. 2021. Data Validation Summary Report, Remedial Investigation Sampling Phase 3, February 2019 through January 2020, Nevada Environmental Response Trust, Henderson, Nevada. January 13. NDEP approved January 27, 2021.

Baseline Health Risk Assessment
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Nevada Environmental Response Trust
Henderson, Nevada

APPENDIX E
SHALLOW GROUNDWATER BHRA DATA SET (PROVIDED
ELECTRONICALLY)

Attachment E-1

Processing of OU-2 Shallow Groundwater BHRA Data Set

This attachment presents the details about the data processing steps for the groundwater baseline health risk assessment (BHRA) data set for the western portion of Operable Unit 2 (OU-2).

As a first step, the analytical results of volatile organic compounds (VOCs) in shallow groundwater samples collected at shallow groundwater monitoring wells (with top of well screens less than 60 feet below ground surface [bgs]) within the western portion of OU-2 were extracted from the NERT project database maintained by Ramboll on behalf of the Trust. The groundwater investigations which were used as the data sources for the BHRA included the Phase 1 Remedial Investigation (RI), Phase 2 RI, and Phase 3 RI (Ramboll 2021a), and 2016-2020 Annual Groundwater Monitoring sampling events (Ramboll Environ 2016, 2017a, Ramboll 2018a, 2019a, 2021b). These data are also included in the corresponding data validation summary reports (DVSRs) submitted to the Nevada Division of Environmental Protection (NDEP) (Ramboll Environ 2017b, Ramboll 2018b, 2018c, 2018d, 2019c, 2019d, 2019e, 2020, 2021c). Shallow groundwater samples collected within the former Parcel A were excluded from this BHRA because this parcel has a no further action (NFA) determination for the vapor intrusion pathway and the groundwater data collected in this area are not needed for the purpose of the BHRA evaluation for groundwater in the western portion of OU-2.¹

After identifying the preliminary set of data for the BHRA, an initial task was implemented to 1) identify and correct inconsistencies in data entries and 2) create additional fields to support data management and interpretation. No change was made to a datum without first understanding the issue and the steps necessary to correct the issue. As needed, the sampling plan, laboratory reports, DVSRs, and other supporting documents were reviewed. The following steps of data processing were completed:

- Standardize the Chemical Abstract Service (CAS) registry number for m,p-xylene from 136777-61-2 to 179601-23-1;
- Identify a unique result for use in the BHRA for sample/analyte pairs for which more than one result was reported. For example, if two results were reported for a chemical in the same sample – one by United States Environmental Protection Agency (USEPA) Method 8260B SIM and the other by USEPA Method 8260 – the result used in the BHRA was identified as the value reported by the most appropriate analytical method for that chemical or the most conservative value if the two analytical methods are equally suitable for that chemical. The data excluded from the BHRA data set during this processing step are summarized in Appendix C, Table C-1.
- Calculate the data for total isomers for use in the BHRA. The purpose of this step is to generate the data in the same chemical form as the toxicity values. For example, the data for m,p-xylenes and o-xylene in the same sample were summed to calculate the

¹ The western portion of former Parcel B also received a NFA determination for the vapor intrusion pathway but the groundwater data collected in Parcel B were used to obtain better spatial coverage in evaluation of the health risks for the vapor intrusion pathway in the neighboring Parcels I and J.

data for xylenes (total) for which the toxicity values are reported; the data for cis-1,3-dichloropropene and trans-1,3-dichloropropene in the same sample were summed to calculate the data for 1,3-dichloropropene (total) for which the toxicity values are reported.

The OU-2 shallow groundwater BHRA data set derived after the above data processing steps is presented in Appendix E, Table E-1. Table E-2 presents the isomer data used for the xylenes (total) and 1,3-dichloropropene (total) calculation described above. Except for the calculated xylenes (total) and 1,3-dichloropropene (total) values, after standardizing the CAS number for m,p-xylene, all data from Tables E-1 and E-2 should 1:1 match the Black Mountain Industrial (BMI) database when joining on the following column pairs: sample_name / sample_id_field, report_cas_rn / cas_id_raw, and BMI_analytical_method / analytical_method.²

References:

- Ramboll Environ US Corporation (Ramboll Environ). 2016. Annual Remedial Performance Report for Chromium and Perchlorate, July 2015 through June 2016. October 31. NDEP approved December 6, 2016.
- Ramboll Environ. 2017a. Annual Remedial Performance Report for Chromium and Perchlorate, Nevada Environmental Response Trust Site, Henderson, Nevada. Dated December 8. NDEP approved February 6, 2018.
- Ramboll Environ. 2017b. Data Validation Summary Report for July through December 2016 Semi-Annual Remedial Performance Sampling, Revision 1, Nevada Environmental Response Trust (NERT), Henderson, Nevada. June 26. NDEP approved August 17, 2017.
- Ramboll US Corporation (Ramboll). 2018a. Annual Remedial Performance Report for Chromium and Perchlorate, Nevada Environmental Response Trust Site, Henderson, Nevada. November 9. NDEP approved January 18, 2019.
- Ramboll. 2018b. Data Validation Summary Report Revision 1, January through March and May 2015 Groundwater Remedial Investigation Sampling, Nevada Environmental Response Trust Site, Henderson, Nevada. June 22. NDEP approved August 14, 2018.
- Ramboll. 2018c. Data Validation Summary Report, Revision 1, January through June 2016, Annual Remedial Performance Sampling, Nevada Environmental Response Trust Henderson, Nevada. June 20. NDEP approved July 10, 2018.
- Ramboll. 2018d. Data Validation Summary Report, Revision 1, Annual Remedial Performance Sampling January through June 2017 and Artesian Well Sampling August 2017, Nevada Environmental Response Trust Henderson, Nevada. February 13. NDEP approved March 5, 2018.
- Ramboll. 2019a. Annual Remedial Performance Report for Chromium and Perchlorate, Nevada Environmental Response Trust Site, Henderson, Nevada. December 31. NDEP approved April 30, 2020.

² Pending NDEP approval on the DVSR for the groundwater data collected in the 2020 groundwater monitoring and GWETS performance monitoring program (Ramboll 2021c).

Ramboll. 2019b. Data Validation Summary Report, Phase 3 Remedial Investigation Sampling, December 2017 through November 2018, Nevada Environmental Response Trust Site, Henderson, Nevada. September 17. NDEP approved October 28, 2019.

Ramboll. 2019c. Data Validation Summary Report, Revision 1, Soil and Groundwater Remedial Investigation Phase 2, July through November 2017, Nevada Environmental Response Trust Site, Henderson, Nevada. May 31. NDEP approved June 3, 2019.

Ramboll. 2019d. Revised Data Validation Summary Report for the Annual Remedial Performance Sampling for January through June 2018, Nevada Environmental Response Trust Henderson, Nevada. January 17. NDEP approved May 14, 2019.

Ramboll. 2019e. Data Validation Summary Report for the Annual Remedial Performance Sampling for January through June 2019, Nevada Environmental Response Trust Henderson, Nevada. December 31. NDEP approved January 13, 2020.

Ramboll. 2020. Data Validation Summary Report, Remedial Investigation Sampling Phase 2, March 2018 through March 2019, Revision 1, Nevada Environmental Response Trust, Henderson, Nevada. February 14. NDEP approved April 9, 2020.

Ramboll. 2021a. Remedial Investigation Report for OU-1 and OU-2, Nevada Environmental Response Trust Site, Henderson, Nevada. July 9. Under NDEP review.

Ramboll. 2021b. Annual Groundwater Monitoring and GWETS Performance Report, Nevada Environmental Response Trust Site, Henderson, Nevada. February 26. NDEP approved May 6, 2021.

Ramboll. 2021c. Data Validation Summary Report for the Groundwater Monitoring and GWETS Performance Report for January through June 2020, Nevada Environmental Response Trust, Henderson, Nevada. February 26. Under NDEP review.

Baseline Health Risk Assessment
for OU-2 Soil Gas and Groundwater
Nevada Environmental Response Trust
Henderson, Nevada

APPENDIX F
PHASE 2 RI MODIFICATION NO. 11 SOIL PHYSICAL PROPERTY
DATA



Petroleum Services Division
3437 Landco Dr.
Bakersfield, California 93308
Tel: 661-325-5657
Fax: 661-325-5808
www.corelab.com

July 11, 2019

Ross Russell
Ramboll US Corporation
2200 Powell Street, Suite 700
Emeryville, CA 94608

Subject: Physical Properties
CL File No.: 1900856

Dear Mr. Russell:

Enclosed are final physical properties data for the 25 samples submitted to our laboratory from your NERT Project (Project No. 169001 1200-028 (Task M03)).

Appropriate ASTM, EPA or API methodologies were used for this project and SOP's are available on request. The samples for this project are currently in storage and will be retained for thirty days past completion of testing at no charge. At the end of thirty days, the samples will be disposed. You may contact us regarding continued storage, disposal, or return of the samples.

Thank you for this opportunity to be of service to Ramboll US Corporation. Please do not hesitate to contact us at (661-325-5657) if you have any questions regarding these results or if we can be of any additional service.

Sincerely,
Core Laboratories

A handwritten signature in black ink, appearing to read "Eva Lopez", is written over a horizontal line.

Eva Lopez
Core Analyst

The analyses, opinions or interpretations contained in this report are based upon observations and material supplied by the client for whose exclusive and confidential use this report has been made. The interpretations or opinions expressed represent the best judgment of Core Laboratories. Core Laboratories assumes no responsibility and makes no warranty or representations, expressed or implied, as to the productivity, proper operations or profitability, however, of any oil, gas, coal or other mineral, property, well or sand in connection with which such report is used or relied upon for any reason whatsoever.



Physical Properties Data

Petroleum Services

Ramboll US Corporation

Core Lab File No: 1900856

Project Name: NERT RI Phase 2

Project Number: 169001 1200-028

| Sample ID. | Depth ft. | METHODS: Sample ¹ Orientation | API RP40 ASTM D2216 | | API RP40 ASTM D2937 | API RP40 | Walkley-Black | |
|-----------------------------|-----------|--|------------------------|----------------------------------|--|--|----------------------------------|-------------------------------------|
| | | | Mositure Content | | Dry Bulk Density g/cm ³ | Total Porosity ² %Vb ³ | Total Organic Carbon mg/kg | Fractional Organic Carbon g/g |
| | | | % weight | cm ³ /cm ³ | | | | |
| PT-RISG1-4.6-5.0-20190226 | 4.6-5.0 | V | 10.1 | 0.167 | 1.66 | 38.3 | 2400 | 2.40E-03 |
| PT-RISG1-9.6-10.0-20190226 | 9.6-10.0 | V | 14.9 | 0.226 | 1.52 | 43.4 | 3000 | 3.00E-03 |
| PT-RISG1-14.6-15.0-20190226 | 14.6-15.0 | V | 20.2 | 0.318 | 1.57 | 41.0 | 3700 | 3.70E-03 |
| PT-RISG2-4.6-5.0-20190226 | 4.6-5.0 | V | 10.0 | 0.172 | 1.71 | 36.1 | 3100 | 3.10E-03 |
| PT-RISG2-9.6-10.0-20190226 | 9.6-10.0 | V | 11.4 | 0.195 | 1.71 | 35.7 | 3000 | 3.00E-03 |
| PT-RISG2-14.6-15.0-20190226 | 14.6-15.0 | V | 8.54 | 0.156 | 1.83 | 31.7 | 3400 | 3.40E-03 |
| PT-RISG3-4.6-5.0-20190226 | 4.6-5.0 | V | 7.03 | 0.129 | 1.83 | 32.5 | 2400 | 2.40E-03 |
| PT-RISG3-9.6-10.0-20190226 | 9.6-10.0 | V | 11.2 | 0.190 | 1.70 | 37.1 | 3000 | 3.00E-03 |
| PT-RISG3-14.6-15.0-20190226 | 14.6-15.0 | V | 11.8 | 0.199 | 1.68 | 36.9 | 3400 | 3.40E-03 |
| PT-RISG4-4.6-5.0-20190226 | 4.6-5.0 | V | 6.87 | 0.121 | 1.77 | 34.2 | 3000 | 3.00E-03 |
| PT-RISG4-9.6-10.0-20190226 | 9.6-10.0 | V | 8.88 | 0.152 | 1.71 | 36.2 | 2900 | 2.90E-03 |
| PT-RISG4-14.6-15.0-20190226 | 14.6-15.0 | V | 14.0 | 0.217 | 1.55 | 42.1 | 3500 | 3.50E-03 |
| PT-RISG5-4.6-5.0-20190226 | 4.6-5.0 | V | -- | -- | -- | -- | 2900 | 2.90E-03 |
| PT-RISG5-9.6-10.0-20190226 | 9.6-10.0 | V | 10.8 | 0.183 | 1.70 | 36.5 | 2900 | 2.90E-03 |



Physical Properties Data

Petroleum Services

Ramboll US Corporation

Core Lab File No: 1900856

Project Name: NERT RI Phase 2

Project Number: 169001 1200-028

| Sample ID. | Depth ft. | METHODS: Sample ¹ Orientation | API RP40 ASTM D2216 | | API RP40 ASTM D2937 | API RP40 | Walkley-Black | |
|-----------------------------|-----------|--|------------------------|----------------------------------|--|--|----------------------------------|-------------------------------------|
| | | | Mositure Content | | Dry Bulk Density g/cm ³ | Total Porosity ² %Vb ³ | Total Organic Carbon mg/kg | Fractional Organic Carbon g/g |
| | | | % weight | cm ³ /cm ³ | | | | |
| PT-RISG5-14.6-15.0-20190226 | 14.6-15.0 | V | 6.34 | 0.112 | 1.77 | 33.8 | 2600 | 2.60E-03 |
| PT-RISG6-12.0-12.5 | 12-12.5 | V | 5.05 | 0.089 | 1.77 | 33.5 | 3900 | 3.90E-03 |
| PT-RISG6-14.5-15 | 14.5-15 | V | 5.57 | 0.079 | 1.42 | 47.5 | 2600 | 2.60E-03 |
| PT-RISG6-4.7-5.0 | 4.7-5.0 | V | -- | -- | -- | -- | 3800 | 3.80E-03 |
| PT-RISG7-4.6-5.0-20190226 | 4.6-5.0 | V | 14.6 | 0.232 | 1.59 | 40.2 | 4200 | 4.20E-03 |
| PT-RISG7-9.6-10.0-20190226 | 9.6-10.0 | V | 36.1 | 0.546 | 1.51 | 42.3 | 2700 | 2.70E-03 |
| PT-RISG8-4.5-5.0 | 4.5-5.0 | V | 10.6 | 0.186 | 1.75 | 34.6 | 3400 | 3.40E-03 |
| PT-RISG8-9.5-10.0 | 9.5-10.0 | V | 14.9 | 0.243 | 1.63 | 38.9 | 3500 | 3.50E-03 |
| PT-RISG8-14.5-15.0 | 14.5-15.0 | V | 20.2 | 0.337 | 1.67 | 37.4 | 3100 | 3.10E-03 |
| PT-RISG9-4.6-5.0-20190226 | 4.6-5.0 | V | 10.3 | 0.177 | 1.72 | 35.3 | 2100 | 2.10E-03 |
| PT-RISG9-9.6-10.0-20190226 | 9.6-10.0 | V | 12.6 | 0.227 | 1.80 | 32.3 | 3100 | 3.10E-03 |

(1) Sample Orientation: H = horizontal; V = vertical.

(2) Total Porosity = no pore fluids in place; all interconnected pore channels.

(3) Vb = Bulk Volume, cc.

(--) = Physical tests not requested



ATTERBERG LIMITS AND SOIL CLASSIFICATION DATA

PETROLEUM SERVICES

Ramboll US Corporation

Core Lab File No.: 1900856

Project Name: NERT RI Phase 2

Project Number: 169001 1200-028

| Sample ID | Depth, ft. | METHODS: ASTM D4318 | | | ASTM D4318 | ASTM D2487 | USDA |
|-----------------------------|------------|-------------------------------|------------------|---------------------|--------------------------------|--|---|
| | | Atterberg Limits ¹ | | | USCS / Plasticity Chart Symbol | USCS Classification | USDA/SCS ² Soil Texture Scheme |
| | | Liquid Limit LL | Plastic Limit PL | Plasticity Index PI | (Fines: <#40 Sieve) | Group Symbol: Name | |
| PT-RISG1-4.6-5.0-20190226 | 4.6-5.0 | 46 | 33 | 13 | ML | SM: Silty sand | Gravelly sand |
| PT-RISG1-9.6-10.0-20190226 | 9.6-10.0 | 55 | 40 | 15 | MH | SP-SM: Poorly graded sand with silt | Gravelly sand |
| PT-RISG1-14.6-15.0-20190226 | 14.6-15.0 | 47 | 40 | 7 | ML | SM: Silty sand | Sandy loam |
| PT-RISG2-4.6-5.0-20190226 | 4.6-5.0 | 35 | 23 | 12 | CL | SP-SC: Poorly graded sand with clay | Sand |
| PT-RISG2-9.6-10.0-20190226 | 9.6-10.0 | 38 | 28 | 10 | ML | SM: Silty sand | Gravelly loamy sand |
| PT-RISG2-14.6-15.0-20190226 | 14.6-15.0 | 27 | 18 | 9 | CL | SC: Clayey sand | Gravelly loamy sand |
| PT-RISG3-4.6-5.0-20190226 | 4.6-5.0 | Non-Plastic | | | NP | SW-SM: Well-graded sand with silt | Gravelly sand |
| PT-RISG3-9.6-10.0-20190226 | 9.6-10.0 | 35 | 26 | 9 | ML | SW-SM: Well-graded sand with silt and gravel | Extremely gravelly loamy sand |
| PT-RISG3-14.6-15.0-20190226 | 14.6-15.0 | 37 | 27 | 10 | ML | SM: Silty sand | Gravelly sand |
| PT-RISG4-4.6-5.0-20190226 | 4.6-5.0 | 32 | 22 | 10 | CL | SC: Clayey sand | Very gravelly loamy sand |
| PT-RISG4-9.6-10.0-20190226 | 9.6-10.0 | 35 | 30 | 5 | ML | SP-SM: Poorly graded sand with silt and gravel | Very gravelly loamy sand |
| PT-RISG4-14.6-15.0-20190226 | 14.6-15.0 | 44 | 30 | 14 | ML | SM: Silty sand | Very gravelly loamy sand |
| PT-RISG5-4.6-5.0-20190226 | 4.6-5.0 | 35 | 26 | 9 | ML | SP-SM: Poorly graded sand with silt | Very gravelly sand |
| PT-RISG5-9.6-10.0-20190226 | 9.6-10.0 | 37 | 25 | 12 | ML | SW-SM: Well-graded sand with silt | Gravelly sand |
| PT-RISG5-14.6-15.0-20190226 | 14.6-15.0 | 33 | 21 | 12 | CL | SW-SC: Well-graded sand with clay | Gravelly sand |
| PT-RISG6-12.0-12.5-20190226 | 12-12.5 | 30 | 20 | 10 | CL | SC: Clayey sand | Very gravelly loamy sand |
| PT-RISG6-14.5-15-20190226 | 14.5-15 | Non-Plastic | | | NP | SP-SM: Poorly graded sand with silt | Sand |
| PT-RISG6-4.7-5.0-20190226 | 4.7-5.0 | 37 | 21 | 16 | CL | SP-SC: Poorly graded sand with clay | Very gravelly loamy sand |
| PT-RISG7-4.6-5.0-20190226 | 4.6-5.0 | 46 | 33 | 13 | ML | SM: Silty sand | Very gravelly loamy sand |
| PT-RISG7-9.6-10.0-20190226 | 9.6-10.0 | 49 | 36 | 13 | ML | SM: Silty sand | Gravelly loamy sand |



ATTERBERG LIMITS AND SOIL CLASSIFICATION DATA

PETROLEUM SERVICES

Ramboll US Corporation

Core Lab File No.: 1900856

Project Name: NERT RI Phase 2
 Project Number: 169001 1200-028

| Sample ID | Depth, ft. | METHODS: ASTM D4318 | | | ASTM D4318 | ASTM D2487 | USDA |
|----------------------------|------------|-------------------------------|------------------|---------------------|--------------------------------|-------------------------------------|---|
| | | Atterberg Limits ¹ | | | USCS / Plasticity Chart Symbol | USCS Classification | USDA/SCS ² Soil Texture Scheme |
| | | Liquid Limit LL | Plastic Limit PL | Plasticity Index PI | (Fines: <#40 Sieve) | Group Symbol: Name | |
| PT-RISG8-4.5-5.0 | 4.5-5.0 | 34 | 23 | 11 | CL | SP-SC: Poorly graded sand with clay | Very gravelly sand |
| PT-RISG8-9.5-10.0 | 9.5-10.0 | 42 | 30 | 12 | ML | SP-SM: Poorly graded sand with silt | Very gravelly sand |
| PT-RISG8-14.5-15.0 | 14.5-15.0 | 39 | 32 | 7 | ML | SM: Silty sand | Gravelly loamy sand |
| PT-RISG9-4.6-5.0-20190226 | 4.6-5.0 | 45 | 22 | 23 | CL | SC: Clayey sand | Gravelly sand |
| PT-RISG9-9.6-10.0-20190226 | 9.6-10.0 | 44 | 25 | 19 | CL | SC: Clayey sand | Very gravelly loamy sand |

USCS: Unified Soil Classification System
 USDA: US Department of Agriculture
 SCS: Soil Conservation Service

- (1) Silt assumed as fine fraction for NON-PLASTIC (NP) samples.
- (2) Sand considered to be >No. 200 sieve for USDA SOIL TEXTURE SCHEME.



MECHANICAL SIEVE PARTICLE SIZE SUMMARY

Petroleum Services

Company: Ramboll US Corporation
Project Name: NERT RI Phase 2
Project Number: 169001 1200-028 (Task M03)

CL File No.: 1900856
Date: 6/28/2019

| Sample ID | Grain Size Description** (Mean from Folk) | Median Grain Size, mm | Component Percentages | | | | | |
|------------------|--|-----------------------|-----------------------|--------|--------|-------|-------|------|
| | | | Gravel | Sand | | | Silt | Clay |
| | | | | Coarse | Medium | Fine | | |
| RISG-1_4.6-5.0 | Medium Grain Sand | 1.3285 | 1.84 | 16.09 | 56.92 | 12.30 | 11.98 | 0.87 |
| RISG-1_9.6-10.0 | Medium Grain Sand | 1.3482 | 0.57 | 17.53 | 58.50 | 12.11 | 10.35 | 0.94 |
| RISG-1_14.6-15.0 | Fine Grain Sand | 0.3315 | 0.00 | 5.50 | 34.58 | 26.27 | 31.24 | 2.41 |
| RISG-2_4.6-5.0 | Medium Grain Sand | 1.3611 | 0.94 | 12.87 | 61.99 | 12.29 | 10.98 | 0.93 |
| RISG-2_9.6-10 | Medium Grain Sand | 1.0350 | 0.00 | 17.54 | 44.31 | 17.99 | 18.56 | 1.59 |
| RISG-2_14.6-15.0 | Medium Grain Sand | 1.2248 | 0.00 | 21.05 | 48.49 | 15.64 | 13.08 | 1.74 |
| RISG-3_4.6-5.0 | Medium Grain Sand | 0.5219 | 5.58 | 16.71 | 32.61 | 34.54 | 9.80 | 0.76 |
| RISG-3_9.6-10.0 | Medium Grain Sand | 2.4254 | 16.68 | 49.93 | 7.59 | 17.27 | 8.23 | 0.29 |
| RISG-3_14.6-15.0 | Medium Grain Sand | 0.6276 | 0.00 | 30.90 | 26.33 | 29.98 | 12.28 | 0.51 |
| RISG-4_4.6-5.0 | Medium Grain Sand | 0.8838 | 0.00 | 42.87 | 16.48 | 26.28 | 13.87 | 0.50 |
| RISG-4_9.6-10.0 | Medium Grain Sand | 2.1626 | 19.65 | 35.02 | 14.27 | 20.16 | 10.50 | 0.41 |
| RISG-4_14.6-15.0 | Medium Grain Sand | 0.9012 | 10.13 | 26.64 | 26.16 | 24.91 | 11.68 | 0.48 |
| RISG-5_4.6-5.0 | Medium Grain Sand | 1.0671 | 13.10 | 28.39 | 26.58 | 23.99 | 7.57 | 0.36 |

**All sizes classed using USCS scale



MECHANICAL SIEVE PARTICLE SIZE SUMMARY

Petroleum Services

Company: Ramboll US Corporation
Project Name: NERT RI Phase 2
Project Number: 169001 1200-028 (Task M03)

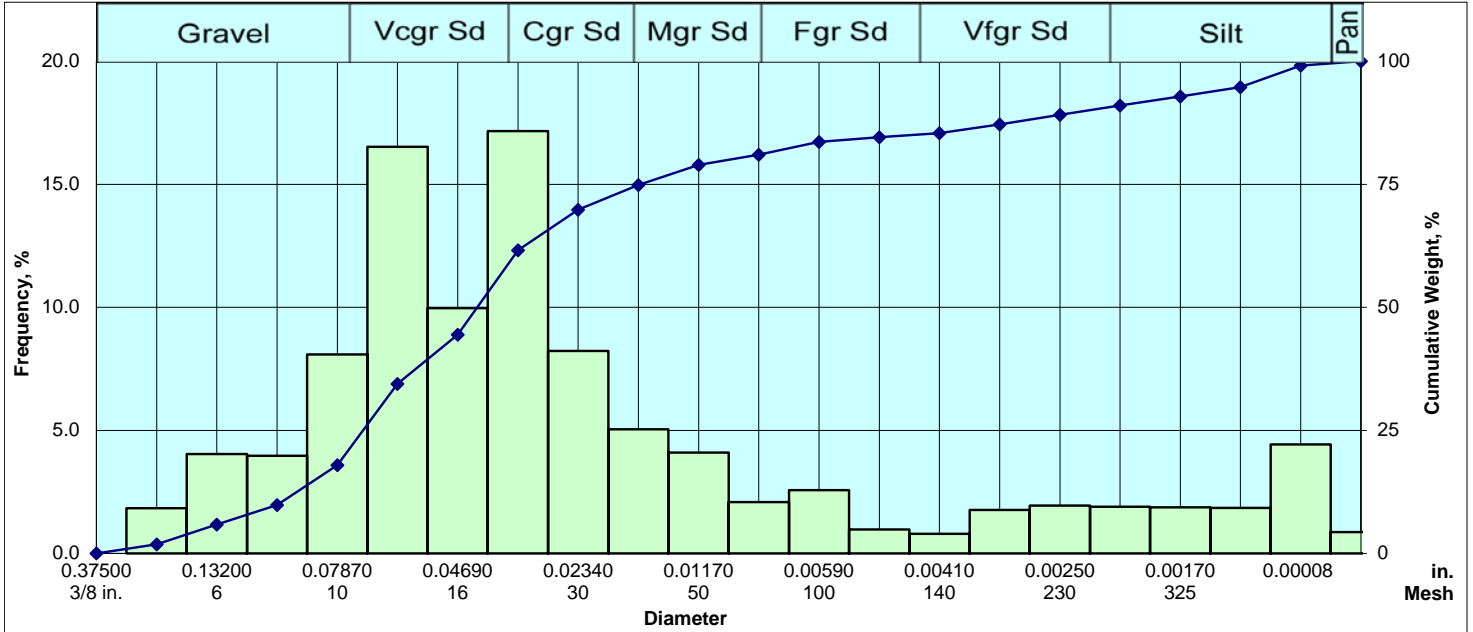
CL File No.: 1900856
Date: 6/28/2019

| Sample ID | Grain Size Description** (Mean from Folk) | Median Grain Size, mm | Component Percentages | | | | | |
|------------------|--|-----------------------|-----------------------|--------|--------|-------|-------|------|
| | | | Gravel | Sand | | | Silt | Clay |
| | | | | Coarse | Medium | Fine | | |
| RISG-5_9.6-10.0 | Medium Grain Sand | 1.2386 | 0.00 | 21.93 | 47.46 | 19.35 | 10.41 | 0.84 |
| RISG-5_14.6-15.0 | Medium Grain Sand | 1.3455 | 13.19 | 17.96 | 44.74 | 14.33 | 8.98 | 0.80 |
| RISG-6_12.0-12.5 | Medium Grain Sand | 2.0792 | 19.03 | 34.89 | 9.67 | 22.24 | 13.18 | 0.98 |
| RISG_6_14.5-15.0 | Medium Grain Sand | 1.2746 | 0.00 | 13.53 | 68.80 | 11.15 | 5.90 | 0.62 |
| RISG-6_4.7-5.0 | Medium Grain Sand | 2.1135 | 12.66 | 39.25 | 18.36 | 21.13 | 8.33 | 0.28 |
| RISG-7_4.6-5.0 | Medium Grain Sand | 0.8636 | 7.06 | 28.98 | 24.51 | 26.63 | 12.41 | 0.41 |
| RISG-7_9.6-10.0 | Medium Grain Sand | 0.5945 | 3.92 | 25.37 | 26.06 | 28.07 | 15.92 | 0.66 |
| RISG-8_4.5-5.0 | Medium Grain Sand | 1.1794 | 8.60 | 33.85 | 24.68 | 22.96 | 9.56 | 0.35 |
| RISG-8_9.5-10.0 | Medium Grain Sand | 1.0783 | 9.22 | 25.85 | 25.57 | 28.67 | 10.44 | 0.24 |
| RISG-8_14.5-15.0 | Medium Grain Sand | 0.6399 | 9.20 | 17.83 | 23.96 | 31.47 | 16.97 | 0.57 |
| RISG-9_4.6-5.0 | Medium Grain Sand | 0.6788 | 2.06 | 20.84 | 29.31 | 34.54 | 12.83 | 0.42 |
| RISG-9_9.6-10.0 | Medium Grain Sand | 1.1340 | 2.92 | 33.73 | 24.96 | 25.41 | 12.36 | 0.63 |

**All sizes classed using USCS scale



Mechanical Sieve Particle Size Analysis



| Particle Size Distribution | | | | | | |
|----------------------------|-----------|-------|------|-----|----------|--------|
| | Diameter | | | | Weight % | |
| | [US Mesh] | [in.] | [mm] | [φ] | [Incl.] | [Cum.] |

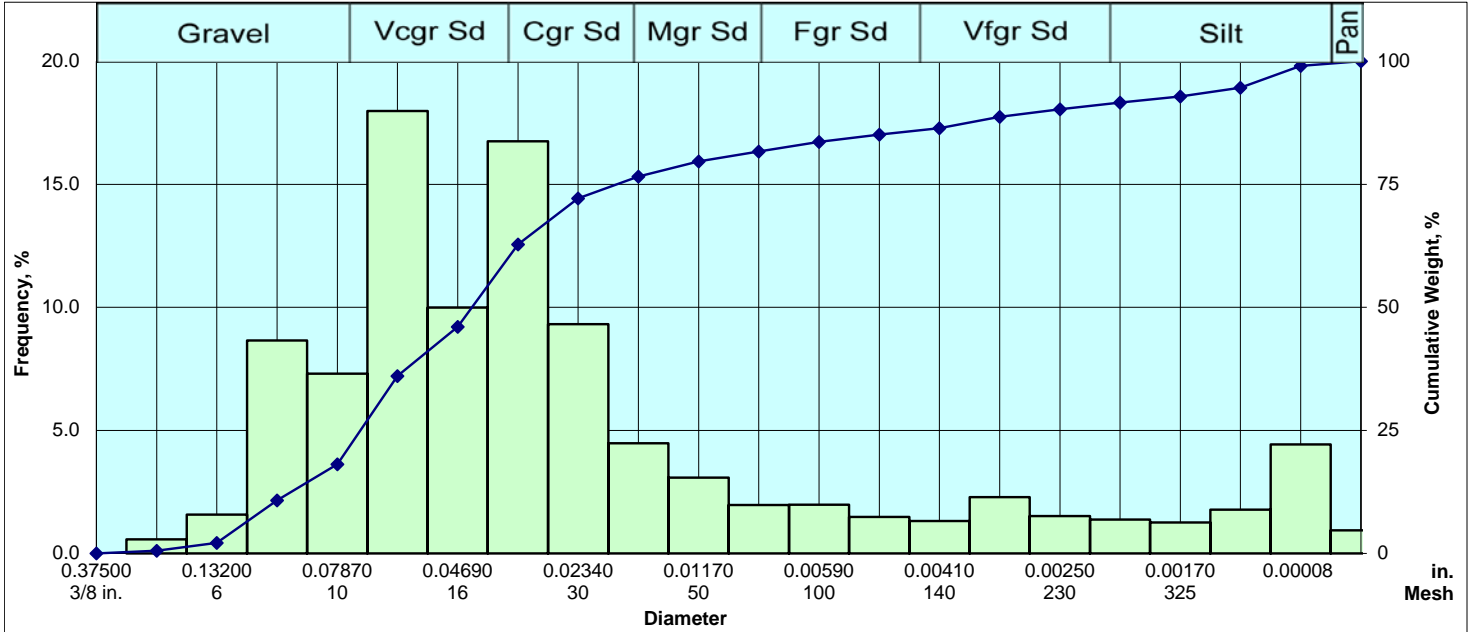
| | | | | | | |
|------------------|---------|---------|--------|-------|--------|---------|
| Gravel | 3/8 in. | 0.37500 | 9.5000 | -3.25 | 0.000 | 0.000 |
| | 4 | 0.18700 | 4.7500 | -2.25 | 1.838 | 1.838 |
| | 6 | 0.13200 | 3.3500 | -1.75 | 4.044 | 5.882 |
| | 8 | 0.09370 | 2.3600 | -1.25 | 3.962 | 9.845 |
| Very Coarse Sand | 10 | 0.07870 | 2.0000 | -1.00 | 8.088 | 17.933 |
| | 14 | 0.05550 | 1.4100 | -0.50 | 16.516 | 34.449 |
| Coarse Sand | 16 | 0.04690 | 1.1800 | -0.25 | 9.971 | 44.421 |
| | 20 | 0.03310 | 0.8500 | 0.25 | 17.164 | 61.585 |
| Medium Sand | 30 | 0.02340 | 0.6000 | 0.75 | 8.225 | 69.809 |
| | 40 | 0.01650 | 0.4250 | 1.25 | 5.039 | 74.849 |
| Fine Sand | 50 | 0.01170 | 0.3000 | 1.75 | 4.092 | 78.940 |
| | 70 | 0.00830 | 0.2120 | 2.25 | 2.090 | 81.031 |
| | 100 | 0.00590 | 0.1500 | 2.75 | 2.574 | 83.605 |
| Very Fine Sand | 120 | 0.00490 | 0.1250 | 3.00 | 0.979 | 84.584 |
| | 140 | 0.00410 | 0.1060 | 3.25 | 0.795 | 85.379 |
| | 200 | 0.00290 | 0.0750 | 3.75 | 1.772 | 87.150 |
| Silt | 230 | 0.00250 | 0.0630 | 4.00 | 1.940 | 89.090 |
| | 270 | 0.00210 | 0.0530 | 4.25 | 1.902 | 90.992 |
| | 325 | 0.00170 | 0.0450 | 4.50 | 1.872 | 92.864 |
| Clay | 400 | 0.00150 | 0.0380 | 4.75 | 1.845 | 94.709 |
| | | 0.00008 | 0.0020 | 9.00 | 4.424 | 99.133 |
| | Pan | 0.00002 | 0.0005 | 11.00 | 0.866 | 100.000 |

| Sorting Statistics (Folk) | | | |
|---------------------------|-------|-------|------|
| Parameter | Trask | Inman | Folk |

| | | | |
|-------------------|-----------------------------|-------------|--------------|
| Median | Medium sand sized | | |
| (in) | 0.0523 | 0.0523 | 0.0523 |
| (mm) | 1.3285 | 1.3285 | 1.3285 |
| Mean | Medium sand sized | | |
| (in) | 0.0551 | 0.0274 | 0.0340 |
| (mm) | 1.3997 | 0.6968 | 0.8640 |
| Sorting | Very poor | | |
| | 1.928 | 1.898 | 2.013 |
| Skewness | Strongly fine skewed | | |
| | 0.861 | 0.491 | 0.443 |
| Kurtosis | Very leptokurtic | | |
| | 0.247 | 0.850 | 1.519 |
| Percentile | [in.] | [mm] | [phi] |
| 5 | 0.2278 | 5.7864 | -2.5327 |
| 10 | 0.1311 | 3.3310 | -1.7360 |
| 16 | 0.1022 | 2.5966 | -1.3766 |
| 25 | 0.0868 | 2.2060 | -1.1414 |
| 50 | 0.0523 | 1.3285 | -0.4098 |
| 75 | 0.0234 | 0.5935 | 0.7526 |
| 84 | 0.0074 | 0.1870 | 2.4192 |
| 90 | 0.0027 | 0.0693 | 3.8518 |
| 95 | 0.0018 | 0.0445 | 4.4888 |



Mechanical Sieve Particle Size Analysis



| Particle Size Distribution | | | | | | |
|----------------------------|-----------|-------|------|-----|----------|--------|
| | Diameter | | | | Weight % | |
| | [US Mesh] | [in.] | [mm] | [φ] | [Incl.] | [Cum.] |

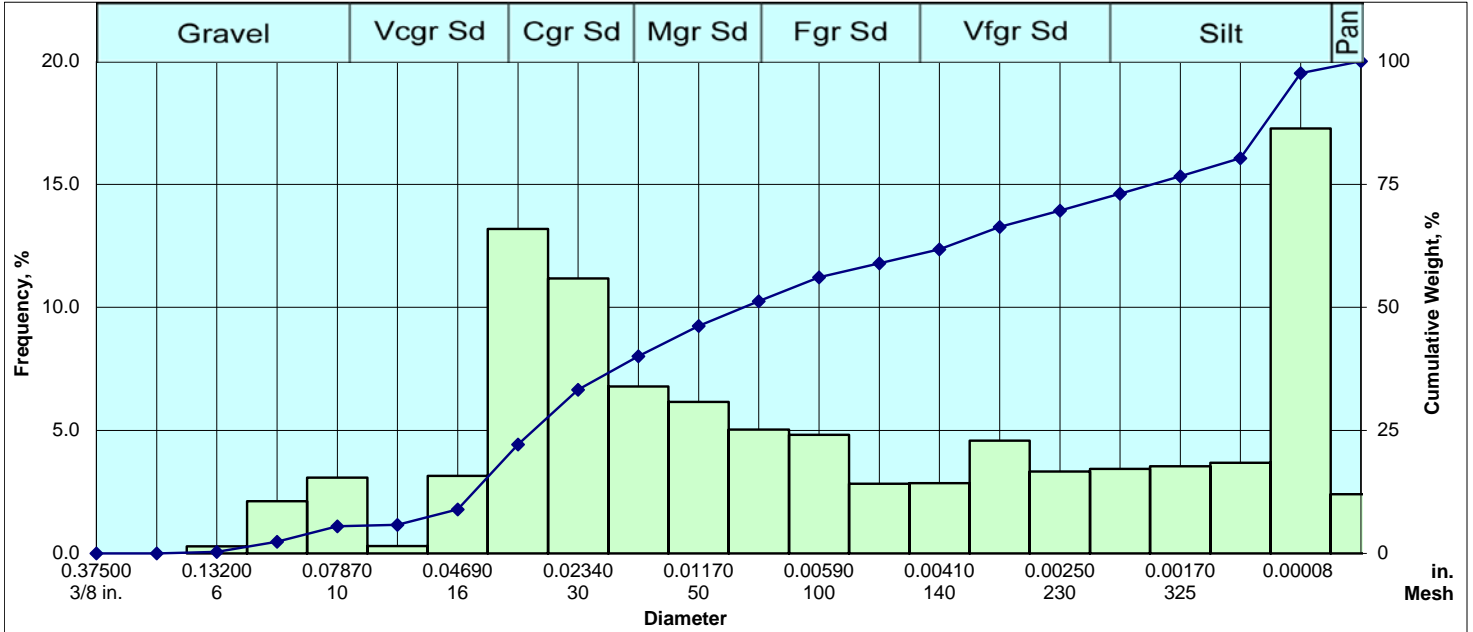
| | | | | | | |
|------------------|---------|---------|--------|-------|--------|---------|
| Gravel | 3/8 in. | 0.37500 | 9.5000 | -3.25 | 0.000 | 0.000 |
| | 4 | 0.18700 | 4.7500 | -2.25 | 0.568 | 0.568 |
| | 6 | 0.13200 | 3.3500 | -1.75 | 1.573 | 2.142 |
| | 8 | 0.09370 | 2.3600 | -1.25 | 8.654 | 10.795 |
| Very Coarse Sand | 10 | 0.07870 | 2.0000 | -1.00 | 7.299 | 18.094 |
| | 14 | 0.05550 | 1.4100 | -0.50 | 17.974 | 36.069 |
| Coarse Sand | 16 | 0.04690 | 1.1800 | -0.25 | 9.988 | 46.056 |
| | 20 | 0.03310 | 0.8500 | 0.25 | 16.748 | 62.804 |
| Medium Sand | 30 | 0.02340 | 0.6000 | 0.75 | 9.316 | 72.120 |
| | 40 | 0.01650 | 0.4250 | 1.25 | 4.476 | 76.596 |
| Fine Sand | 50 | 0.01170 | 0.3000 | 1.75 | 3.084 | 79.680 |
| | 70 | 0.00830 | 0.2120 | 2.25 | 1.970 | 81.650 |
| | 100 | 0.00590 | 0.1500 | 2.75 | 1.976 | 83.626 |
| Very Fine Sand | 120 | 0.00490 | 0.1250 | 3.00 | 1.483 | 85.108 |
| | 140 | 0.00410 | 0.1060 | 3.25 | 1.312 | 86.420 |
| | 200 | 0.00290 | 0.0750 | 3.75 | 2.289 | 88.709 |
| Silt | 230 | 0.00250 | 0.0630 | 4.00 | 1.518 | 90.227 |
| | 270 | 0.00210 | 0.0530 | 4.25 | 1.375 | 91.602 |
| | 325 | 0.00170 | 0.0450 | 4.50 | 1.253 | 92.855 |
| Clay | 400 | 0.00150 | 0.0380 | 4.75 | 1.783 | 94.637 |
| | | 0.00008 | 0.0020 | 9.00 | 4.423 | 99.060 |
| | Pan | 0.00002 | 0.0005 | 11.00 | 0.940 | 100.000 |

| Sorting Statistics (Folk) | | | |
|---------------------------|-------|-------|------|
| Parameter | Trask | Inman | Folk |

| | | | |
|-------------------|-------------------------------|-------------|--------------|
| Median | Very coarse sand sized | | |
| (in) | 0.0531 | 0.0531 | 0.0531 |
| (mm) | 1.3482 | 1.3482 | 1.3482 |
| Mean | Coarse sand sized | | |
| (in) | 0.0573 | 0.0284 | 0.0350 |
| (mm) | 1.4554 | 0.7205 | 0.8879 |
| Sorting | Poor | | |
| | 1.796 | 1.876 | 1.937 |
| Skewness | Strongly fine skewed | | |
| | 0.918 | 0.482 | 0.488 |
| Kurtosis | Very leptokurtic | | |
| | 0.225 | 0.757 | 1.600 |
| Percentile | [in.] | [mm] | [phi] |
| 5 | 0.1688 | 4.2876 | -2.1002 |
| 10 | 0.1370 | 3.4787 | -1.7985 |
| 16 | 0.1041 | 2.6441 | -1.4028 |
| 25 | 0.0875 | 2.2217 | -1.1517 |
| 50 | 0.0531 | 1.3482 | -0.4310 |
| 75 | 0.0271 | 0.6891 | 0.5371 |
| 84 | 0.0077 | 0.1963 | 2.3485 |
| 90 | 0.0031 | 0.0796 | 3.6506 |
| 95 | 0.0017 | 0.0444 | 4.4925 |



Mechanical Sieve Particle Size Analysis



| Particle Size Distribution | | | | | | |
|----------------------------|-----------|-------|------|-----|----------|--------|
| | Diameter | | | | Weight % | |
| | [US Mesh] | [in.] | [mm] | [φ] | [Incl.] | [Cum.] |

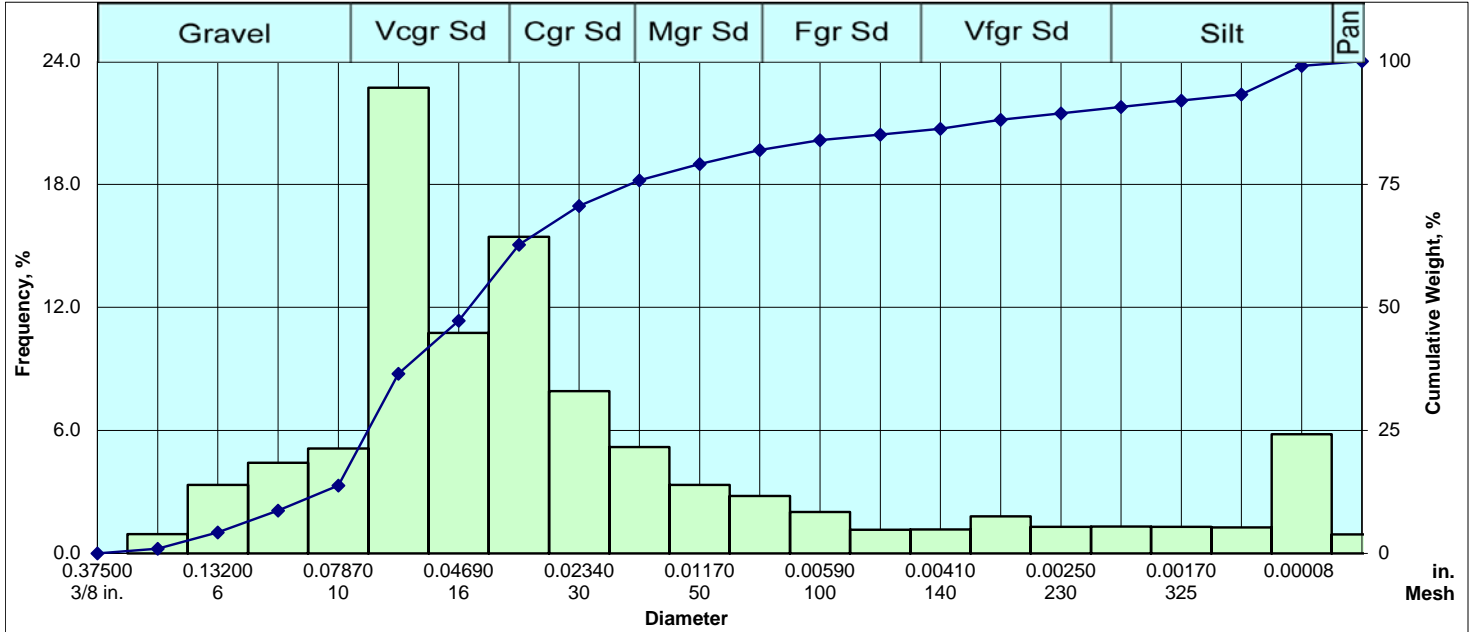
| | | | | | | |
|------------------|---------|---------|--------|-------|--------|---------|
| Gravel | 3/8 in. | 0.37500 | 9.5000 | -3.25 | 0.000 | 0.000 |
| | 4 | 0.18700 | 4.7500 | -2.25 | 0.000 | 0.000 |
| | 6 | 0.13200 | 3.3500 | -1.75 | 0.289 | 0.289 |
| | 8 | 0.09370 | 2.3600 | -1.25 | 2.122 | 2.411 |
| Very Coarse Sand | 10 | 0.07870 | 2.0000 | -1.00 | 3.086 | 5.497 |
| | 14 | 0.05550 | 1.4100 | -0.50 | 0.294 | 5.790 |
| Coarse Sand | 16 | 0.04690 | 1.1800 | -0.25 | 3.148 | 8.938 |
| | 20 | 0.03310 | 0.8500 | 0.25 | 13.186 | 22.123 |
| Medium Sand | 30 | 0.02340 | 0.6000 | 0.75 | 11.172 | 33.295 |
| | 40 | 0.01650 | 0.4250 | 1.25 | 6.783 | 40.078 |
| Fine Sand | 50 | 0.01170 | 0.3000 | 1.75 | 6.160 | 46.238 |
| | 70 | 0.00830 | 0.2120 | 2.25 | 5.030 | 51.268 |
| | 100 | 0.00590 | 0.1500 | 2.75 | 4.816 | 56.084 |
| Very Fine Sand | 120 | 0.00490 | 0.1250 | 3.00 | 2.831 | 58.915 |
| | 140 | 0.00410 | 0.1060 | 3.25 | 2.851 | 61.767 |
| | 200 | 0.00290 | 0.0750 | 3.75 | 4.579 | 66.345 |
| Silt | 230 | 0.00250 | 0.0630 | 4.00 | 3.324 | 69.669 |
| | 270 | 0.00210 | 0.0530 | 4.25 | 3.430 | 73.100 |
| | 325 | 0.00170 | 0.0450 | 4.50 | 3.545 | 76.644 |
| Clay | 400 | 0.00150 | 0.0380 | 4.75 | 3.679 | 80.323 |
| | Pan | 0.00002 | 0.0005 | 11.00 | 2.410 | 100.000 |

| Sorting Statistics (Folk) | | | |
|---------------------------|-------|-------|------|
| Parameter | Trask | Inman | Folk |

| | | | |
|------------|------------------|--------|---------|
| Median | Fine sand sized | | |
| (in) | 0.0131 | 0.0131 | 0.0131 |
| (mm) | 0.3315 | 0.3315 | 0.3315 |
| Mean | Fine sand sized | | |
| (in) | 0.0227 | 0.0093 | 0.0104 |
| (mm) | 0.5763 | 0.2362 | 0.2645 |
| Sorting | Very poor | | |
| | 4.359 | 2.441 | 2.131 |
| Skewness | Finely skewed | | |
| | 0.758 | 0.200 | 0.114 |
| Kurtosis | Very platykurtic | | |
| | 0.387 | 0.232 | 0.580 |
| Percentile | [in.] | [mm] | [phi] |
| 5 | 0.0992 | 2.5193 | -1.3330 |
| 10 | 0.0544 | 1.3823 | -0.4670 |
| 16 | 0.0505 | 1.2822 | -0.3586 |
| 25 | 0.0431 | 1.0950 | -0.1310 |
| 50 | 0.0131 | 0.3315 | 1.5928 |
| 75 | 0.0023 | 0.0576 | 4.1168 |
| 84 | 0.0017 | 0.0435 | 4.5225 |
| 90 | 0.0016 | 0.0411 | 4.6055 |
| 95 | 0.0015 | 0.0390 | 4.6785 |



Mechanical Sieve Particle Size Analysis



| Particle Size Distribution | | | | | | |
|----------------------------|-----------|-------|------|-----|----------|--------|
| | Diameter | | | | Weight % | |
| | [US Mesh] | [in.] | [mm] | [φ] | [Incl.] | [Cum.] |

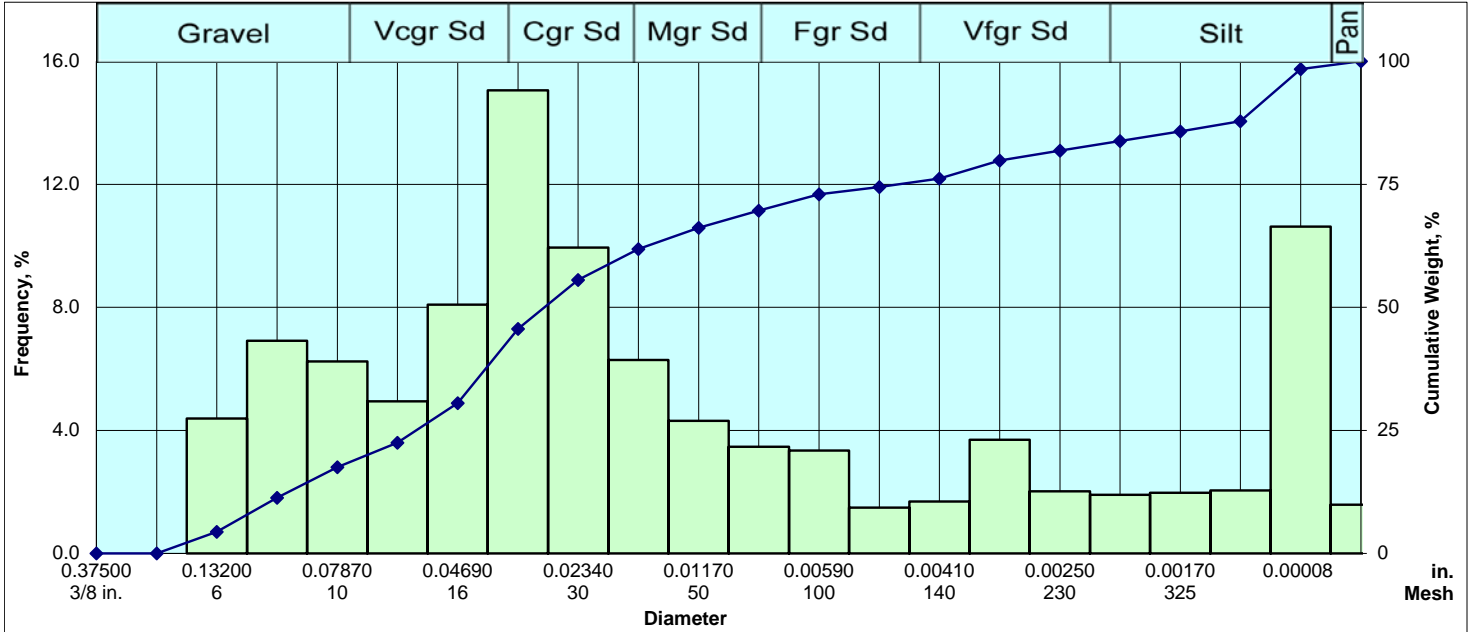
| | | | | | | |
|------------------|---------|---------|--------|-------|--------|---------|
| Gravel | 3/8 in. | 0.37500 | 9.5000 | -3.25 | 0.000 | 0.000 |
| | 4 | 0.18700 | 4.7500 | -2.25 | 0.939 | 0.939 |
| | 6 | 0.13200 | 3.3500 | -1.75 | 3.335 | 4.274 |
| | 8 | 0.09370 | 2.3600 | -1.25 | 4.415 | 8.690 |
| Very Coarse Sand | 10 | 0.07870 | 2.0000 | -1.00 | 5.120 | 13.809 |
| | 14 | 0.05550 | 1.4100 | -0.50 | 22.704 | 36.513 |
| Coarse Sand | 16 | 0.04690 | 1.1800 | -0.25 | 10.754 | 47.268 |
| | 20 | 0.03310 | 0.8500 | 0.25 | 15.437 | 62.705 |
| Medium Sand | 30 | 0.02340 | 0.6000 | 0.75 | 7.913 | 70.617 |
| | 40 | 0.01650 | 0.4250 | 1.25 | 5.184 | 75.802 |
| Fine Sand | 50 | 0.01170 | 0.3000 | 1.75 | 3.336 | 79.138 |
| | 70 | 0.00830 | 0.2120 | 2.25 | 2.803 | 81.941 |
| | 100 | 0.00590 | 0.1500 | 2.75 | 2.022 | 83.963 |
| Very Fine Sand | 120 | 0.00490 | 0.1250 | 3.00 | 1.148 | 85.112 |
| | 140 | 0.00410 | 0.1060 | 3.25 | 1.170 | 86.281 |
| | 200 | 0.00290 | 0.0750 | 3.75 | 1.813 | 88.094 |
| Silt | 230 | 0.00250 | 0.0630 | 4.00 | 1.300 | 89.393 |
| | 270 | 0.00210 | 0.0530 | 4.25 | 1.311 | 90.705 |
| | 325 | 0.00170 | 0.0450 | 4.50 | 1.294 | 91.999 |
| Clay | 400 | 0.00150 | 0.0380 | 4.75 | 1.263 | 93.262 |
| | Pan | 0.00002 | 0.0005 | 11.00 | 0.929 | 100.000 |

| Sorting Statistics (Folk) | | | |
|---------------------------|-------|-------|------|
| Parameter | Trask | Inman | Folk |

| | | | |
|------------|----------------------|--------|---------|
| Median | Medium sand sized | | |
| (in) | 0.0536 | 0.0536 | 0.0536 |
| (mm) | 1.3611 | 1.3611 | 1.3611 |
| Mean | Medium sand sized | | |
| (in) | 0.0555 | 0.0275 | 0.0344 |
| (mm) | 1.4106 | 0.6988 | 0.8727 |
| Sorting | Poor | | |
| | 1.849 | 1.734 | 1.885 |
| Skewness | Strongly fine skewed | | |
| | 0.867 | 0.555 | 0.520 |
| Kurtosis | Very leptokurtic | | |
| | 0.255 | 0.937 | 1.553 |
| Percentile | [in.] | [mm] | [phi] |
| 5 | 0.1779 | 4.5199 | -2.1763 |
| 10 | 0.1219 | 3.0966 | -1.6307 |
| 16 | 0.0915 | 2.3253 | -1.2174 |
| 25 | 0.0859 | 2.1826 | -1.1260 |
| 50 | 0.0536 | 1.3611 | -0.4447 |
| 75 | 0.0251 | 0.6387 | 0.6469 |
| 84 | 0.0083 | 0.2100 | 2.2515 |
| 90 | 0.0027 | 0.0694 | 3.8479 |
| 95 | 0.0017 | 0.0429 | 4.5427 |



Mechanical Sieve Particle Size Analysis



| Particle Size Distribution | | | | | | |
|----------------------------|-----------|-------|------|-----|----------|--------|
| | Diameter | | | | Weight % | |
| | [US Mesh] | [in.] | [mm] | [φ] | [Incl.] | [Cum.] |

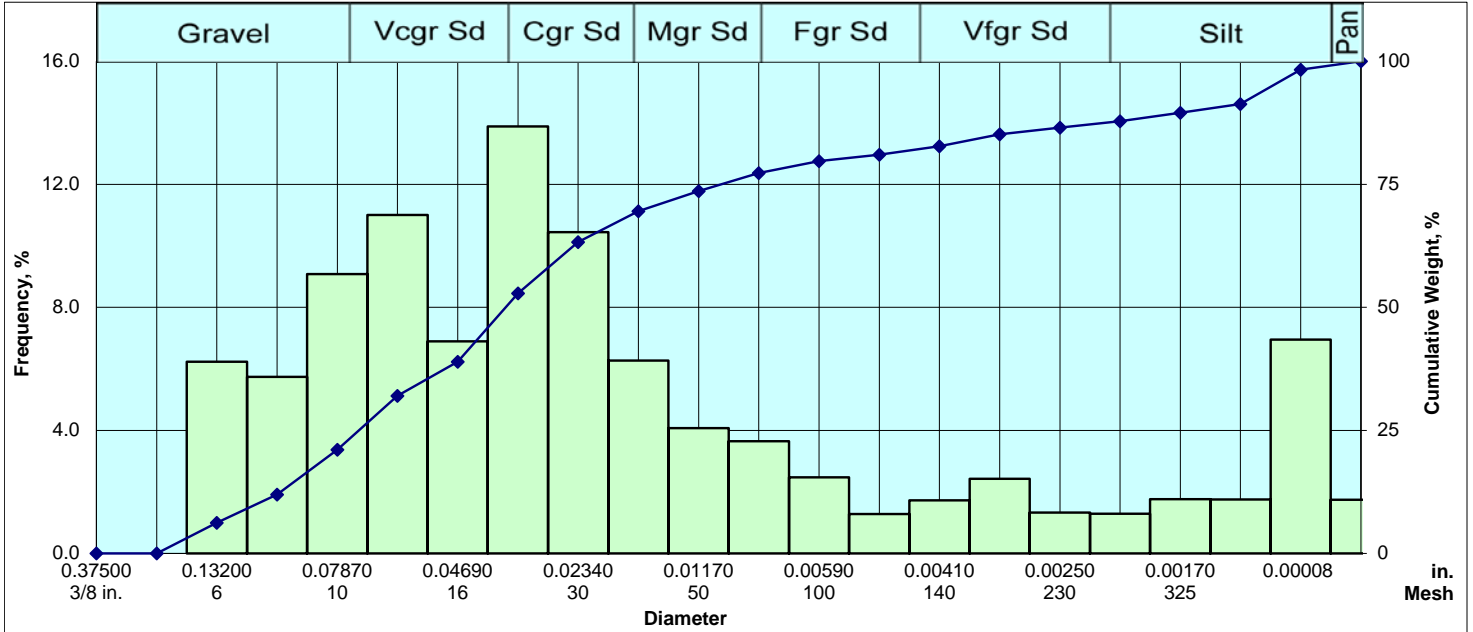
| | | | | | | |
|------------------|---------|---------|--------|-------|--------|---------|
| Gravel | 3/8 in. | 0.37500 | 9.5000 | -3.25 | 0.000 | 0.000 |
| | 4 | 0.18700 | 4.7500 | -2.25 | 0.000 | 0.000 |
| | 6 | 0.13200 | 3.3500 | -1.75 | 4.386 | 4.386 |
| | 8 | 0.09370 | 2.3600 | -1.25 | 6.912 | 11.298 |
| Very Coarse Sand | 10 | 0.07870 | 2.0000 | -1.00 | 6.246 | 17.544 |
| | 14 | 0.05550 | 1.4100 | -0.50 | 4.943 | 22.487 |
| Coarse Sand | 16 | 0.04690 | 1.1800 | -0.25 | 8.085 | 30.572 |
| | 20 | 0.03310 | 0.8500 | 0.25 | 15.058 | 45.630 |
| Medium Sand | 30 | 0.02340 | 0.6000 | 0.75 | 9.942 | 55.573 |
| | 40 | 0.01650 | 0.4250 | 1.25 | 6.285 | 61.858 |
| Fine Sand | 50 | 0.01170 | 0.3000 | 1.75 | 4.306 | 66.164 |
| | 70 | 0.00830 | 0.2120 | 2.25 | 3.469 | 69.633 |
| | 100 | 0.00590 | 0.1500 | 2.75 | 3.348 | 72.981 |
| Very Fine Sand | 120 | 0.00490 | 0.1250 | 3.00 | 1.491 | 74.472 |
| | 140 | 0.00410 | 0.1060 | 3.25 | 1.684 | 76.157 |
| | 200 | 0.00290 | 0.0750 | 3.75 | 3.693 | 79.850 |
| Silt | 230 | 0.00250 | 0.0630 | 4.00 | 2.015 | 81.865 |
| | 270 | 0.00210 | 0.0530 | 4.25 | 1.908 | 83.772 |
| | 325 | 0.00170 | 0.0450 | 4.50 | 1.971 | 85.743 |
| Clay | 400 | 0.00150 | 0.0380 | 4.75 | 2.049 | 87.792 |
| | Pan | 0.00002 | 0.0005 | 11.00 | 1.588 | 100.000 |

| Sorting Statistics (Folk) | | | |
|---------------------------|-------|-------|------|
| Parameter | Trask | Inman | Folk |

| | | | |
|------------|----------------------|--------|---------|
| Median | Medium sand sized | | |
| (in) | 0.0407 | 0.0407 | 0.0407 |
| (mm) | 1.0350 | 1.0350 | 1.0350 |
| Mean | Medium sand sized | | |
| (in) | 0.0385 | 0.0158 | 0.0217 |
| (mm) | 0.9778 | 0.4014 | 0.5504 |
| Sorting | Very poor | | |
| | 3.572 | 2.698 | 2.386 |
| Skewness | Strongly fine skewed | | |
| | 0.491 | 0.506 | 0.438 |
| Kurtosis | Platykurtic | | |
| | 0.234 | 0.268 | 0.764 |
| Percentile | [in.] | [mm] | [phi] |
| 5 | 0.1821 | 4.6256 | -2.2097 |
| 10 | 0.1422 | 3.6129 | -1.8532 |
| 16 | 0.1025 | 2.6047 | -1.3811 |
| 25 | 0.0714 | 1.8135 | -0.8588 |
| 50 | 0.0407 | 1.0350 | -0.0496 |
| 75 | 0.0056 | 0.1422 | 2.8143 |
| 84 | 0.0024 | 0.0618 | 4.0152 |
| 90 | 0.0017 | 0.0435 | 4.5214 |
| 95 | 0.0016 | 0.0402 | 4.6349 |



Mechanical Sieve Particle Size Analysis



| Particle Size Distribution | | | | | | |
|----------------------------|-----------|-------|------|-----|----------|--------|
| | Diameter | | | | Weight % | |
| | [US Mesh] | [in.] | [mm] | [φ] | [Incl.] | [Cum.] |

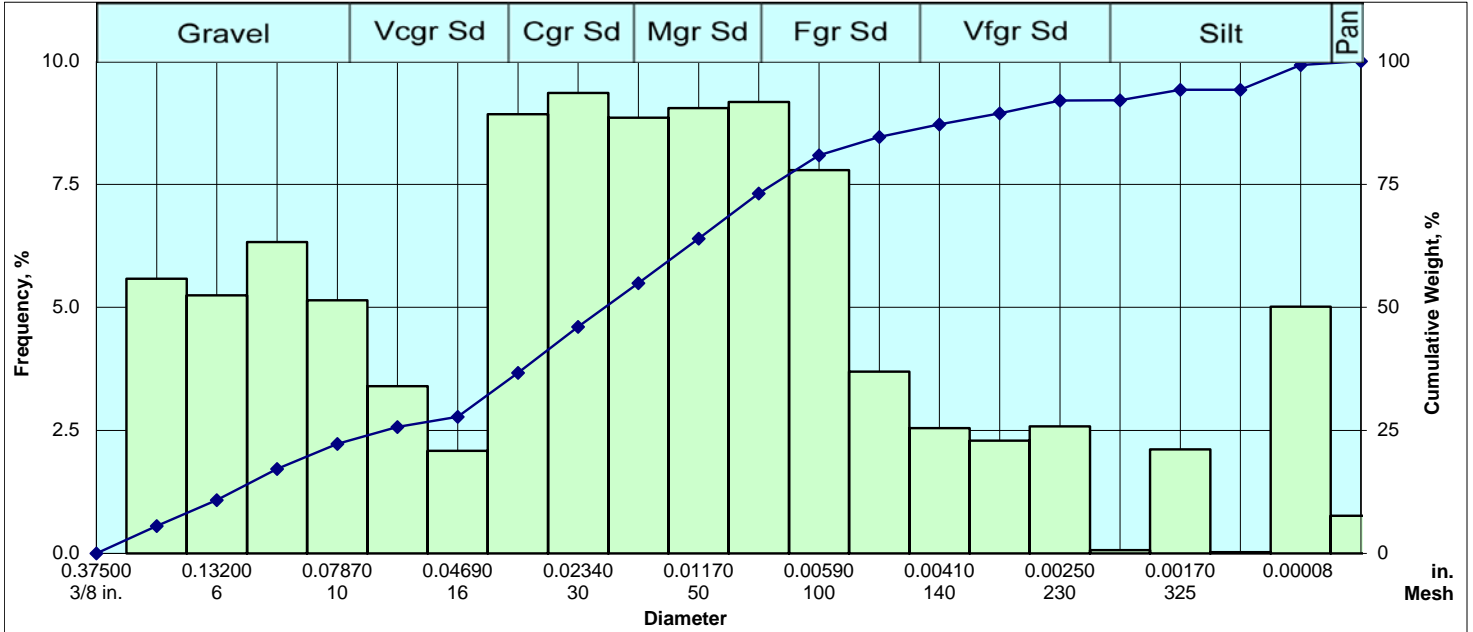
| | | | | | | |
|------------------|---------|---------|--------|-------|--------|---------|
| Gravel | 3/8 in. | 0.37500 | 9.5000 | -3.25 | 0.000 | 0.000 |
| | 4 | 0.18700 | 4.7500 | -2.25 | 0.000 | 0.000 |
| | 6 | 0.13200 | 3.3500 | -1.75 | 6.229 | 6.229 |
| | 8 | 0.09370 | 2.3600 | -1.25 | 5.741 | 11.970 |
| Very Coarse Sand | 10 | 0.07870 | 2.0000 | -1.00 | 9.081 | 21.051 |
| | 14 | 0.05550 | 1.4100 | -0.50 | 10.999 | 32.050 |
| Coarse Sand | 16 | 0.04690 | 1.1800 | -0.25 | 6.894 | 38.944 |
| | 20 | 0.03310 | 0.8500 | 0.25 | 13.880 | 52.824 |
| Medium Sand | 30 | 0.02340 | 0.6000 | 0.75 | 10.447 | 63.272 |
| | 40 | 0.01650 | 0.4250 | 1.25 | 6.266 | 69.537 |
| Fine Sand | 50 | 0.01170 | 0.3000 | 1.75 | 4.075 | 73.612 |
| | 70 | 0.00830 | 0.2120 | 2.25 | 3.651 | 77.263 |
| | 100 | 0.00590 | 0.1500 | 2.75 | 2.476 | 79.738 |
| Very Fine Sand | 120 | 0.00490 | 0.1250 | 3.00 | 1.281 | 81.020 |
| | 140 | 0.00410 | 0.1060 | 3.25 | 1.729 | 82.748 |
| | 200 | 0.00290 | 0.0750 | 3.75 | 2.427 | 85.175 |
| Silt | 230 | 0.00250 | 0.0630 | 4.00 | 1.325 | 86.500 |
| | 270 | 0.00210 | 0.0530 | 4.25 | 1.294 | 87.794 |
| | 325 | 0.00170 | 0.0450 | 4.50 | 1.764 | 89.557 |
| Clay | 400 | 0.00150 | 0.0380 | 4.75 | 1.751 | 91.308 |
| | Pan | 0.00002 | 0.0005 | 11.00 | 1.741 | 100.000 |

| Sorting Statistics (Folk) | | | |
|---------------------------|-------|-------|------|
| Parameter | Trask | Inman | Folk |

| | | | |
|-------------------|-----------------------------|-------------|--------------|
| Median | Medium sand sized | | |
| (in) | 0.0482 | 0.0482 | 0.0482 |
| (mm) | 1.2248 | 1.2248 | 1.2248 |
| Mean | Medium sand sized | | |
| (in) | 0.0513 | 0.0228 | 0.0293 |
| (mm) | 1.3041 | 0.5791 | 0.7433 |
| Sorting | Very poor | | |
| | 2.431 | 2.330 | 2.241 |
| Skewness | Strongly fine skewed | | |
| | 0.749 | 0.464 | 0.420 |
| Kurtosis | Lepokurtic | | |
| | 0.245 | 0.525 | 1.136 |
| Percentile | [in.] | [mm] | [phi] |
| 5 | 0.2239 | 5.6871 | -2.5077 |
| 10 | 0.1508 | 3.8304 | -1.9375 |
| 16 | 0.1146 | 2.9106 | -1.5413 |
| 25 | 0.0878 | 2.2307 | -1.1575 |
| 50 | 0.0482 | 1.2248 | -0.2925 |
| 75 | 0.0149 | 0.3775 | 1.4055 |
| 84 | 0.0045 | 0.1152 | 3.1178 |
| 90 | 0.0020 | 0.0510 | 4.2940 |
| 95 | 0.0016 | 0.0413 | 4.5983 |



Mechanical Sieve Particle Size Analysis



| Particle Size Distribution | | | | | | |
|----------------------------|-----------|-------|------|-----|----------|--------|
| | Diameter | | | | Weight % | |
| | [US Mesh] | [in.] | [mm] | [φ] | [Incl.] | [Cum.] |

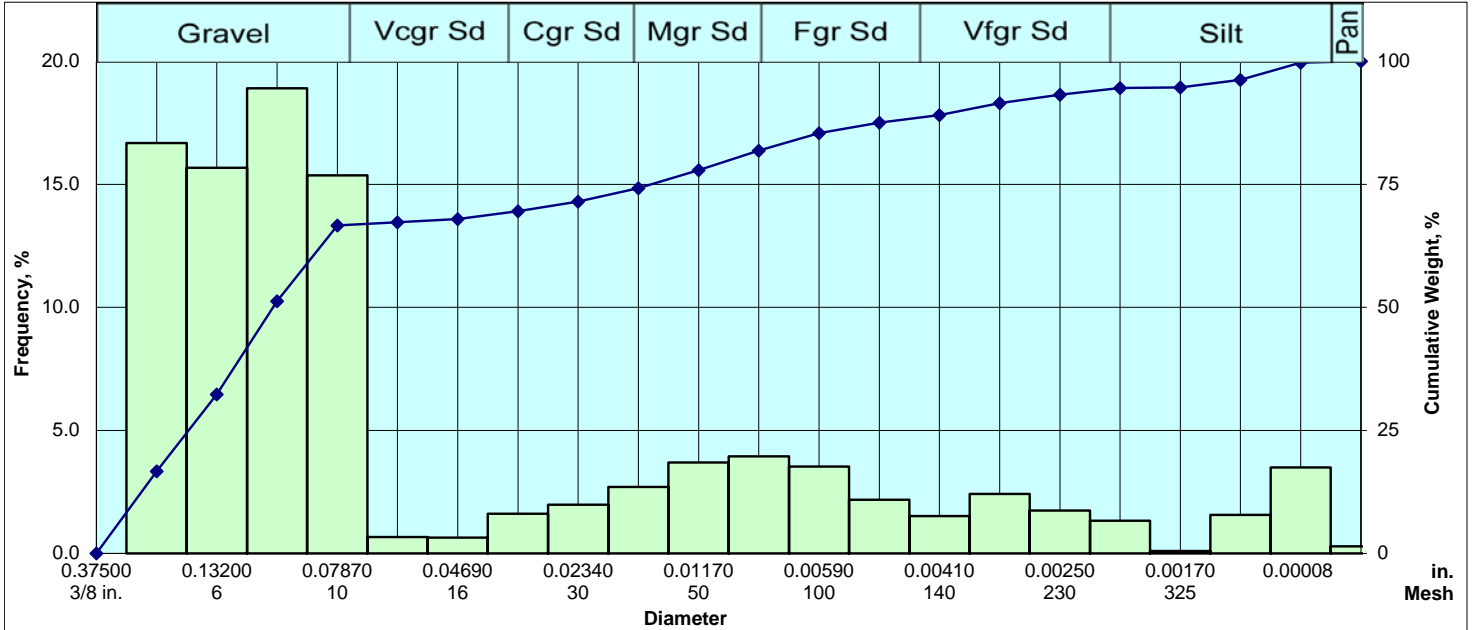
| | | | | | | |
|------------------|---------|---------|--------|-------|-------|---------|
| Gravel | 3/8 in. | 0.37500 | 9.5000 | -3.25 | 0.000 | 0.000 |
| | 4 | 0.18700 | 4.7500 | -2.25 | 5.581 | 5.581 |
| | 6 | 0.13200 | 3.3500 | -1.75 | 5.242 | 10.823 |
| | 8 | 0.09370 | 2.3600 | -1.25 | 6.325 | 17.147 |
| Very Coarse Sand | 10 | 0.07870 | 2.0000 | -1.00 | 5.141 | 22.288 |
| | 14 | 0.05550 | 1.4100 | -0.50 | 3.396 | 25.684 |
| Coarse Sand | 16 | 0.04690 | 1.1800 | -0.25 | 2.083 | 27.767 |
| | 20 | 0.03310 | 0.8500 | 0.25 | 8.925 | 36.693 |
| Medium Sand | 30 | 0.02340 | 0.6000 | 0.75 | 9.355 | 46.048 |
| | 40 | 0.01650 | 0.4250 | 1.25 | 8.854 | 54.902 |
| Fine Sand | 50 | 0.01170 | 0.3000 | 1.75 | 9.047 | 63.950 |
| | 70 | 0.00830 | 0.2120 | 2.25 | 9.172 | 73.122 |
| | 100 | 0.00590 | 0.1500 | 2.75 | 7.786 | 80.908 |
| Very Fine Sand | 120 | 0.00490 | 0.1250 | 3.00 | 3.693 | 84.601 |
| | 140 | 0.00410 | 0.1060 | 3.25 | 2.547 | 87.148 |
| | 200 | 0.00290 | 0.0750 | 3.75 | 2.290 | 89.438 |
| Silt | 230 | 0.00250 | 0.0630 | 4.00 | 2.584 | 92.022 |
| | 270 | 0.00210 | 0.0530 | 4.25 | 0.064 | 92.086 |
| | 325 | 0.00170 | 0.0450 | 4.50 | 2.114 | 94.200 |
| Clay | 400 | 0.00150 | 0.0380 | 4.75 | 0.024 | 94.223 |
| | Pan | 0.00002 | 0.0005 | 11.00 | 5.014 | 99.238 |
| | | | | | 0.762 | 100.000 |

| Sorting Statistics (Folk) | | | |
|---------------------------|-------|-------|------|
| Parameter | Trask | Inman | Folk |

| | | | |
|------------|-------------------|--------|---------|
| Median | Medium sand sized | | |
| (in) | 0.0205 | 0.0205 | 0.0205 |
| (mm) | 0.5219 | 0.5219 | 0.5219 |
| Mean | Medium sand sized | | |
| (in) | 0.0338 | 0.0225 | 0.0219 |
| (mm) | 0.8590 | 0.5725 | 0.5551 |
| Sorting | Very poor | | |
| | 2.778 | 2.149 | 2.156 |
| Skewness | Near symmetrical | | |
| | 1.049 | -0.062 | 0.003 |
| Kurtosis | Mesokurtic | | |
| | 0.189 | 0.661 | 0.992 |
| Percentile | [in.] | [mm] | [phi] |
| 5 | 0.2065 | 5.2441 | -2.3907 |
| 10 | 0.1405 | 3.5698 | -1.8358 |
| 16 | 0.1000 | 2.5396 | -1.3446 |
| 25 | 0.0599 | 1.5209 | -0.6049 |
| 50 | 0.0205 | 0.5219 | 0.9382 |
| 75 | 0.0078 | 0.1970 | 2.3434 |
| 84 | 0.0051 | 0.1291 | 2.9538 |
| 90 | 0.0028 | 0.0724 | 3.7881 |
| 95 | 0.0015 | 0.0372 | 4.7488 |



Mechanical Sieve Particle Size Analysis



| Particle Size Distribution | | | | | | |
|----------------------------|-----------|-------|------|-----|----------|--------|
| | Diameter | | | | Weight % | |
| | [US Mesh] | [in.] | [mm] | [φ] | [Incl.] | [Cum.] |

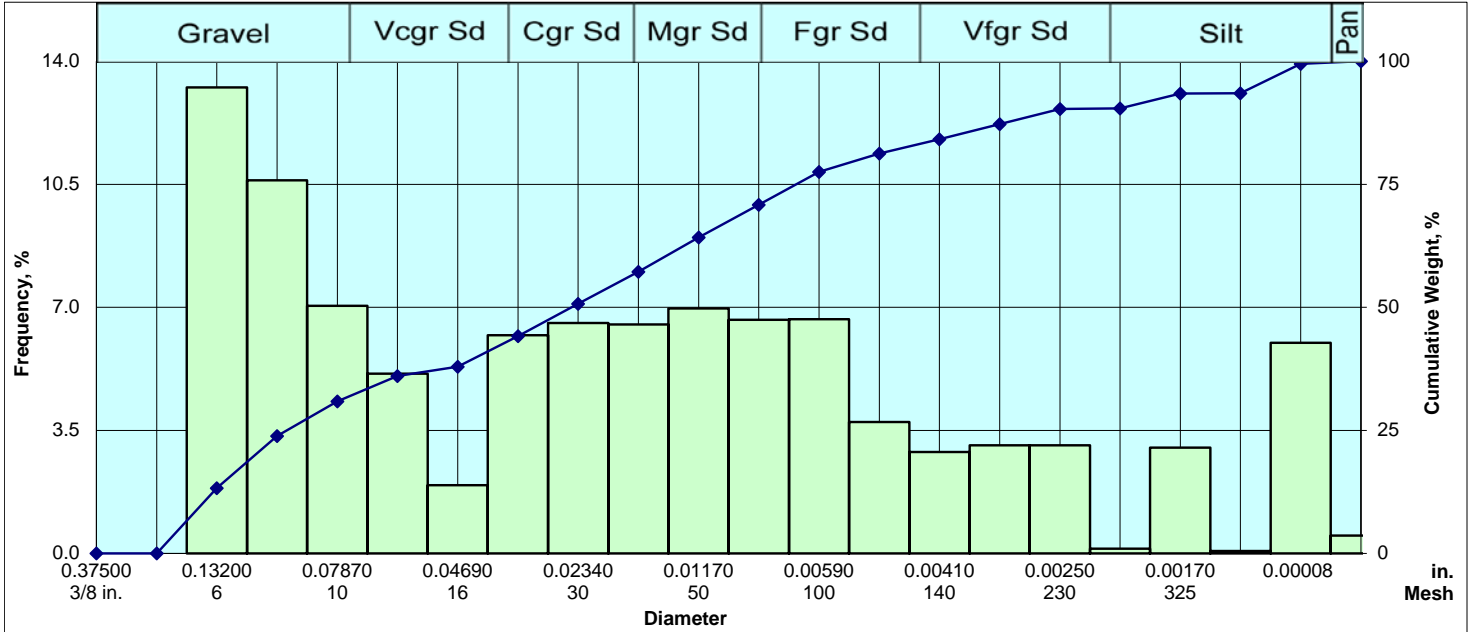
| | | | | | | |
|------------------|---------|---------|--------|-------|--------|---------|
| Gravel | 3/8 in. | 0.37500 | 9.5000 | -3.25 | 0.000 | 0.000 |
| | 4 | 0.18700 | 4.7500 | -2.25 | 16.678 | 16.678 |
| | 6 | 0.13200 | 3.3500 | -1.75 | 15.668 | 32.346 |
| | 8 | 0.09370 | 2.3600 | -1.25 | 18.902 | 51.248 |
| Very Coarse Sand | 10 | 0.07870 | 2.0000 | -1.00 | 15.364 | 66.613 |
| | 14 | 0.05550 | 1.4100 | -0.50 | 0.667 | 67.280 |
| Coarse Sand | 16 | 0.04690 | 1.1800 | -0.25 | 0.637 | 67.917 |
| | 20 | 0.03310 | 0.8500 | 0.25 | 1.607 | 69.524 |
| Medium Sand | 30 | 0.02340 | 0.6000 | 0.75 | 1.981 | 71.505 |
| | 40 | 0.01650 | 0.4250 | 1.25 | 2.699 | 74.204 |
| Fine Sand | 50 | 0.01170 | 0.3000 | 1.75 | 3.689 | 77.893 |
| | 70 | 0.00830 | 0.2120 | 2.25 | 3.942 | 81.836 |
| | 100 | 0.00590 | 0.1500 | 2.75 | 3.528 | 85.363 |
| Very Fine Sand | 120 | 0.00490 | 0.1250 | 3.00 | 2.183 | 87.547 |
| | 140 | 0.00410 | 0.1060 | 3.25 | 1.516 | 89.063 |
| | 200 | 0.00290 | 0.0750 | 3.75 | 2.416 | 91.479 |
| Silt | 230 | 0.00250 | 0.0630 | 4.00 | 1.739 | 93.217 |
| | 270 | 0.00210 | 0.0530 | 4.25 | 1.334 | 94.552 |
| | 325 | 0.00170 | 0.0450 | 4.50 | 0.101 | 94.653 |
| Clay | 400 | 0.00150 | 0.0380 | 4.75 | 1.567 | 96.220 |
| | Pan | 0.00002 | 0.0005 | 11.00 | 0.289 | 100.000 |

| Sorting Statistics (Folk) | | | |
|---------------------------|-------|-------|------|
| Parameter | Trask | Inman | Folk |

| | | | |
|------------|----------------------|--------|---------|
| Median | Coarse sand sized | | |
| (in) | 0.0955 | 0.0955 | 0.0955 |
| (mm) | 2.4254 | 2.4254 | 2.4254 |
| Mean | Medium sand sized | | |
| (in) | 0.0867 | 0.0365 | 0.0503 |
| (mm) | 2.2022 | 0.9273 | 1.2777 |
| Sorting | Very poor | | |
| | 3.173 | 2.414 | 2.349 |
| Skewness | Strongly fine skewed | | |
| | 0.521 | 0.575 | 0.557 |
| Kurtosis | Mesokurtic | | |
| | 0.275 | 0.561 | 0.927 |
| Percentile | [in.] | [mm] | [phi] |
| 5 | 0.3180 | 8.0760 | -3.0136 |
| 10 | 0.2619 | 6.6520 | -2.7338 |
| 16 | 0.1946 | 4.9432 | -2.3055 |
| 25 | 0.1577 | 4.0064 | -2.0023 |
| 50 | 0.0955 | 2.4254 | -1.2782 |
| 75 | 0.0157 | 0.3980 | 1.3290 |
| 84 | 0.0068 | 0.1740 | 2.5232 |
| 90 | 0.0037 | 0.0940 | 3.4116 |
| 95 | 0.0017 | 0.0434 | 4.5245 |



Mechanical Sieve Particle Size Analysis



| Particle Size Distribution | | | | | | |
|----------------------------|-----------|-------|------|-----|----------|--------|
| | Diameter | | | | Weight % | |
| | [US Mesh] | [in.] | [mm] | [φ] | [Incl.] | [Cum.] |

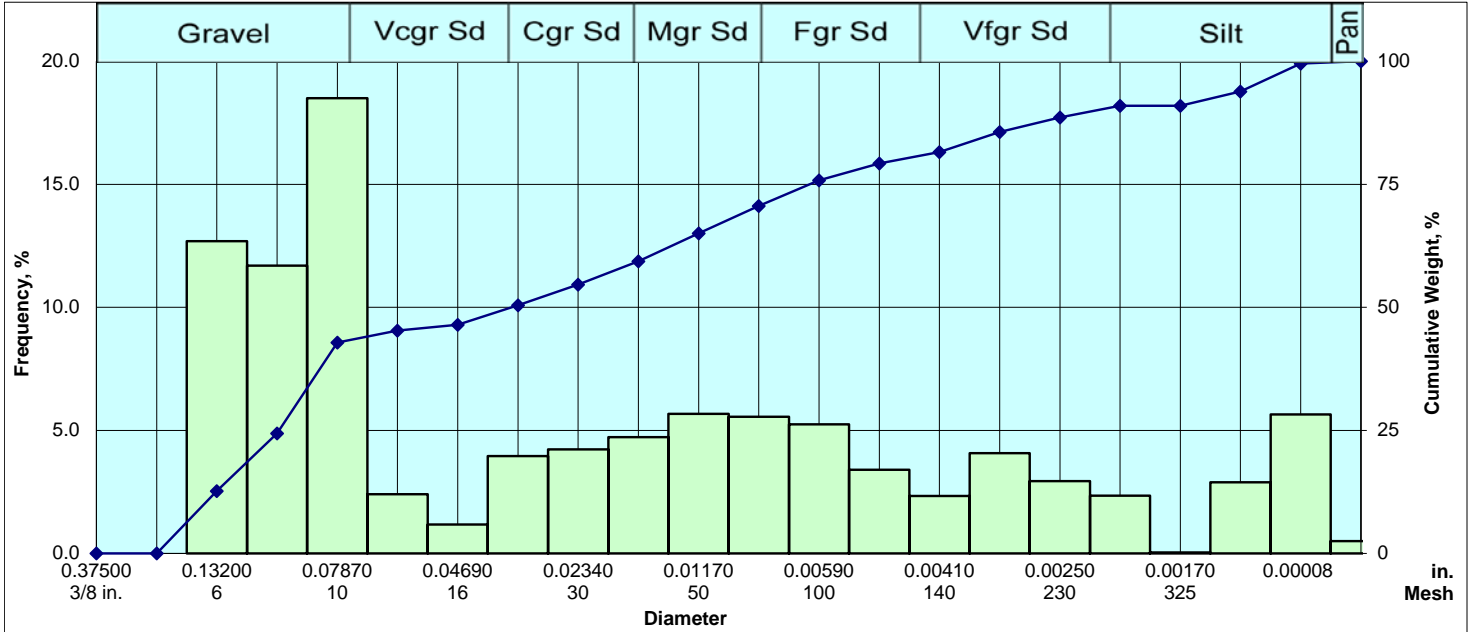
| | | | | | | |
|------------------|---------|---------|--------|-------|--------|---------|
| Gravel | 3/8 in. | 0.37500 | 9.5000 | -3.25 | 0.000 | 0.000 |
| | 4 | 0.18700 | 4.7500 | -2.25 | 0.000 | 0.000 |
| | 6 | 0.13200 | 3.3500 | -1.75 | 13.253 | 13.253 |
| | 8 | 0.09370 | 2.3600 | -1.25 | 10.613 | 23.866 |
| Very Coarse Sand | 10 | 0.07870 | 2.0000 | -1.00 | 7.039 | 30.905 |
| | 14 | 0.05550 | 1.4100 | -0.50 | 5.114 | 36.019 |
| Coarse Sand | 16 | 0.04690 | 1.1800 | -0.25 | 1.941 | 37.960 |
| | 20 | 0.03310 | 0.8500 | 0.25 | 6.208 | 44.168 |
| Medium Sand | 30 | 0.02340 | 0.6000 | 0.75 | 6.555 | 50.723 |
| | 40 | 0.01650 | 0.4250 | 1.25 | 6.511 | 57.234 |
| Fine Sand | 50 | 0.01170 | 0.3000 | 1.75 | 6.967 | 64.201 |
| | 70 | 0.00830 | 0.2120 | 2.25 | 6.648 | 70.850 |
| | 100 | 0.00590 | 0.1500 | 2.75 | 6.665 | 77.514 |
| Very Fine Sand | 120 | 0.00490 | 0.1250 | 3.00 | 3.739 | 81.254 |
| | 140 | 0.00410 | 0.1060 | 3.25 | 2.887 | 84.141 |
| | 200 | 0.00290 | 0.0750 | 3.75 | 3.074 | 87.215 |
| Silt | 230 | 0.00250 | 0.0630 | 4.00 | 3.074 | 90.289 |
| | 270 | 0.00210 | 0.0530 | 4.25 | 0.137 | 90.426 |
| | 325 | 0.00170 | 0.0450 | 4.50 | 3.008 | 93.434 |
| Clay | 400 | 0.00150 | 0.0380 | 4.75 | 0.066 | 93.500 |
| | | 0.00008 | 0.0020 | 9.00 | 5.993 | 99.494 |
| | Pan | 0.00002 | 0.0005 | 11.00 | 0.506 | 100.000 |

| Sorting Statistics (Folk) | | | |
|---------------------------|-------|-------|------|
| Parameter | Trask | Inman | Folk |

| | | | |
|------------|-------------------|--------|---------|
| Median | Medium sand sized | | |
| (in) | 0.0247 | 0.0247 | 0.0247 |
| (mm) | 0.6276 | 0.6276 | 0.6276 |
| Mean | Medium sand sized | | |
| (in) | 0.0487 | 0.0226 | 0.0233 |
| (mm) | 1.2377 | 0.5752 | 0.5921 |
| Sorting | Very poor | | |
| | 3.644 | 2.427 | 2.251 |
| Skewness | Finely skewed | | |
| | 1.007 | 0.052 | 0.124 |
| Kurtosis | Platykurtic | | |
| | 0.293 | 0.411 | 0.752 |
| Percentile | [in.] | [mm] | [phi] |
| 5 | 0.1662 | 4.2218 | -2.0779 |
| 10 | 0.1454 | 3.6936 | -1.8850 |
| 16 | 0.1218 | 3.0937 | -1.6293 |
| 25 | 0.0906 | 2.3020 | -1.2029 |
| 50 | 0.0247 | 0.6276 | 0.6721 |
| 75 | 0.0068 | 0.1734 | 2.5279 |
| 84 | 0.0042 | 0.1069 | 3.2253 |
| 90 | 0.0025 | 0.0641 | 3.9629 |
| 95 | 0.0014 | 0.0366 | 4.7714 |



Mechanical Sieve Particle Size Analysis



| Particle Size Distribution | | | | | | |
|----------------------------|-----------|-------|------|-----|----------|--------|
| | Diameter | | | | Weight % | |
| | [US Mesh] | [in.] | [mm] | [φ] | [Incl.] | [Cum.] |

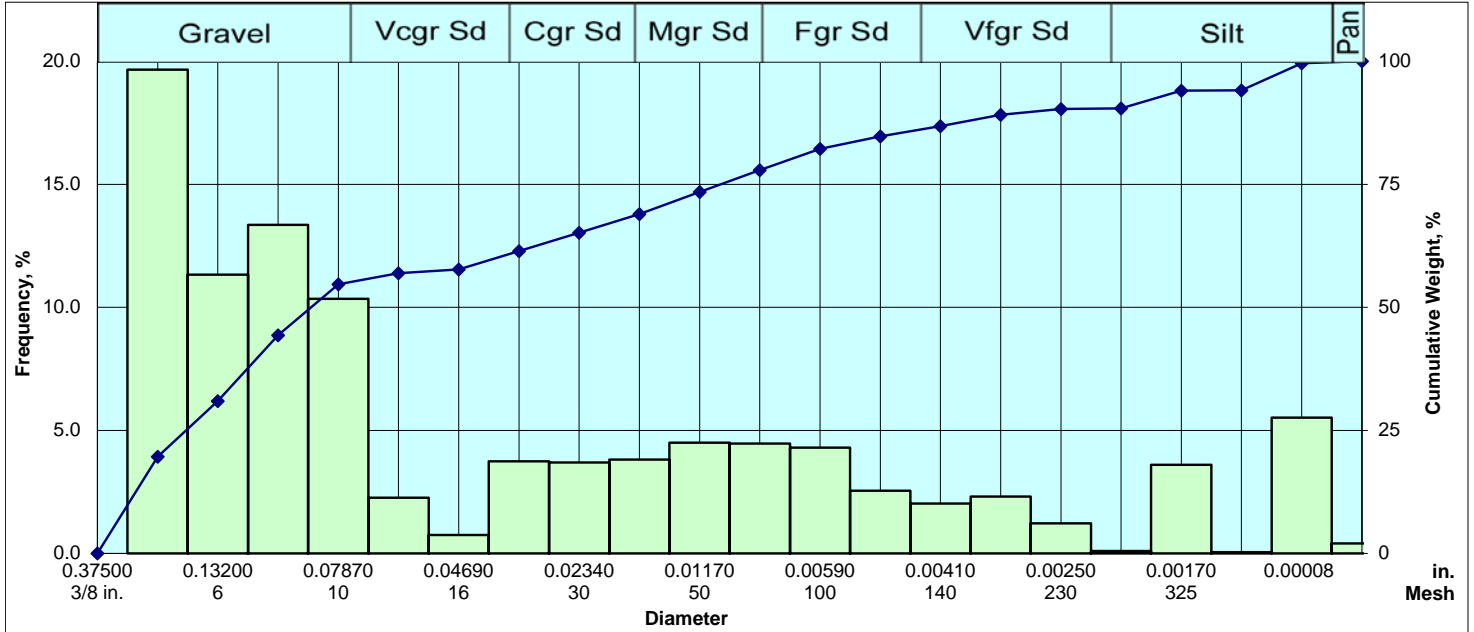
| | | | | | | |
|------------------|---------|---------|--------|-------|--------|---------|
| Gravel | 3/8 in. | 0.37500 | 9.5000 | -3.25 | 0.000 | 0.000 |
| | 4 | 0.18700 | 4.7500 | -2.25 | 0.000 | 0.000 |
| | 6 | 0.13200 | 3.3500 | -1.75 | 12.685 | 12.685 |
| | 8 | 0.09370 | 2.3600 | -1.25 | 11.692 | 24.377 |
| Very Coarse Sand | 10 | 0.07870 | 2.0000 | -1.00 | 18.493 | 42.870 |
| | 14 | 0.05550 | 1.4100 | -0.50 | 2.407 | 45.277 |
| Coarse Sand | 16 | 0.04690 | 1.1800 | -0.25 | 1.177 | 46.454 |
| | 20 | 0.03310 | 0.8500 | 0.25 | 3.951 | 50.405 |
| Medium Sand | 30 | 0.02340 | 0.6000 | 0.75 | 4.226 | 54.631 |
| | 40 | 0.01650 | 0.4250 | 1.25 | 4.723 | 59.354 |
| Fine Sand | 50 | 0.01170 | 0.3000 | 1.75 | 5.670 | 65.024 |
| | 70 | 0.00830 | 0.2120 | 2.25 | 5.548 | 70.572 |
| | 100 | 0.00590 | 0.1500 | 2.75 | 5.250 | 75.821 |
| Very Fine Sand | 120 | 0.00490 | 0.1250 | 3.00 | 3.401 | 79.222 |
| | 140 | 0.00410 | 0.1060 | 3.25 | 2.338 | 81.560 |
| | 200 | 0.00290 | 0.0750 | 3.75 | 4.073 | 85.634 |
| Silt | 230 | 0.00250 | 0.0630 | 4.00 | 2.942 | 88.576 |
| | 270 | 0.00210 | 0.0530 | 4.25 | 2.346 | 90.922 |
| | 325 | 0.00170 | 0.0450 | 4.50 | 0.038 | 90.960 |
| Clay | 400 | 0.00150 | 0.0380 | 4.75 | 2.896 | 93.856 |
| | | 0.00008 | 0.0020 | 9.00 | 5.648 | 99.504 |
| | Pan | 0.00002 | 0.0005 | 11.00 | 0.496 | 100.000 |

| Sorting Statistics (Folk) | | | |
|---------------------------|-------|-------|------|
| Parameter | Trask | Inman | Folk |

| | | | |
|------------|----------------------|--------|---------|
| Median | Medium sand sized | | |
| (in) | 0.0348 | 0.0348 | 0.0348 |
| (mm) | 0.8838 | 0.8838 | 0.8838 |
| Mean | Medium sand sized | | |
| (in) | 0.0494 | 0.0204 | 0.0244 |
| (mm) | 1.2538 | 0.5180 | 0.6190 |
| Sorting | Very poor | | |
| | 3.834 | 2.567 | 2.318 |
| Skewness | Strongly fine skewed | | |
| | 0.693 | 0.300 | 0.321 |
| Kurtosis | Platykurtic | | |
| | 0.305 | 0.331 | 0.722 |
| Percentile | [in.] | [mm] | [phi] |
| 5 | 0.1653 | 4.1982 | -2.0698 |
| 10 | 0.1436 | 3.6464 | -1.8665 |
| 16 | 0.1208 | 3.0693 | -1.6179 |
| 25 | 0.0924 | 2.3479 | -1.2314 |
| 50 | 0.0348 | 0.8838 | 0.1782 |
| 75 | 0.0063 | 0.1597 | 2.6465 |
| 84 | 0.0034 | 0.0874 | 3.5157 |
| 90 | 0.0022 | 0.0569 | 4.1347 |
| 95 | 0.0015 | 0.0369 | 4.7609 |



Mechanical Sieve Particle Size Analysis



| Particle Size Distribution | | | | | | |
|----------------------------|-----------|-------|------|-----|----------|--------|
| | Diameter | | | | Weight % | |
| | [US Mesh] | [in.] | [mm] | [φ] | [Incl.] | [Cum.] |

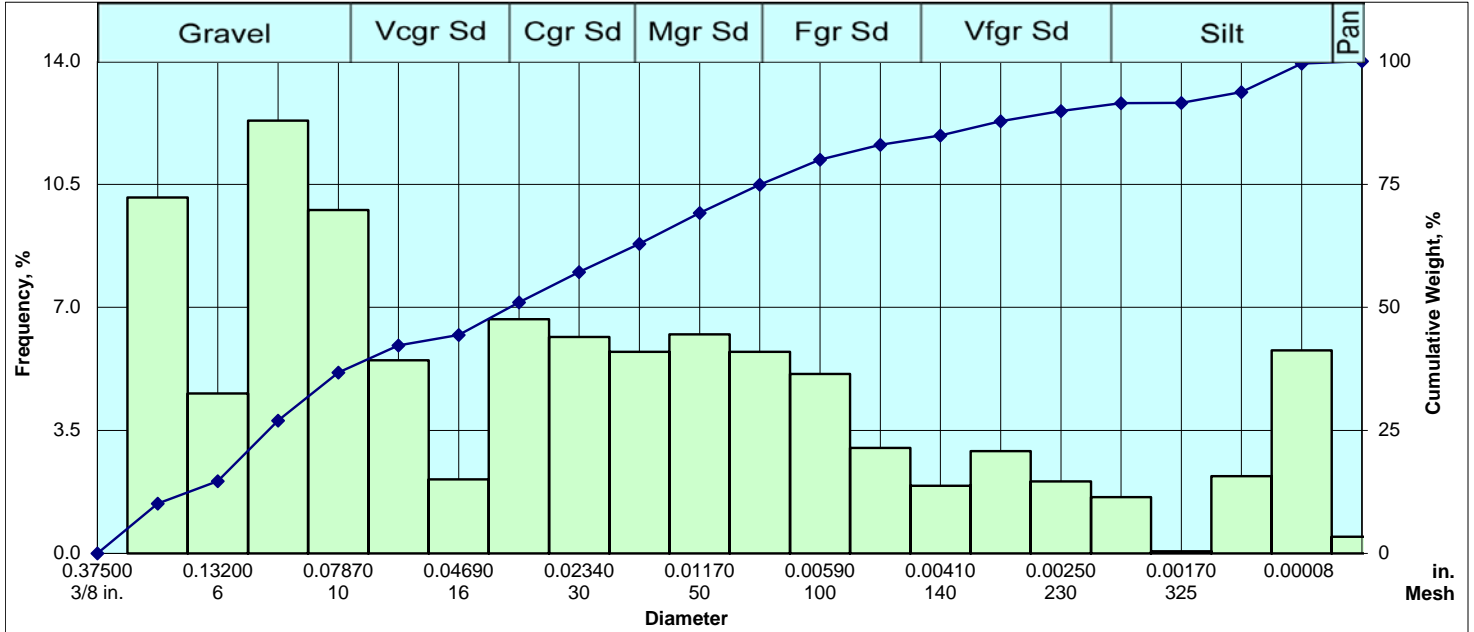
| | | | | | | |
|------------------|---------|---------|--------|-------|--------|---------|
| Gravel | 3/8 in. | 0.37500 | 9.5000 | -3.25 | 0.000 | 0.000 |
| | 4 | 0.18700 | 4.7500 | -2.25 | 19.653 | 19.653 |
| | 6 | 0.13200 | 3.3500 | -1.75 | 11.327 | 30.980 |
| | 8 | 0.09370 | 2.3600 | -1.25 | 13.347 | 44.327 |
| Very Coarse Sand | 10 | 0.07870 | 2.0000 | -1.00 | 10.347 | 54.675 |
| | 14 | 0.05550 | 1.4100 | -0.50 | 2.265 | 56.940 |
| Coarse Sand | 16 | 0.04690 | 1.1800 | -0.25 | 0.753 | 57.693 |
| | 20 | 0.03310 | 0.8500 | 0.25 | 3.747 | 61.440 |
| Medium Sand | 30 | 0.02340 | 0.6000 | 0.75 | 3.692 | 65.132 |
| | 40 | 0.01650 | 0.4250 | 1.25 | 3.808 | 68.940 |
| Fine Sand | 50 | 0.01170 | 0.3000 | 1.75 | 4.500 | 73.440 |
| | 70 | 0.00830 | 0.2120 | 2.25 | 4.463 | 77.904 |
| | 100 | 0.00590 | 0.1500 | 2.75 | 4.298 | 82.202 |
| Very Fine Sand | 120 | 0.00490 | 0.1250 | 3.00 | 2.547 | 84.749 |
| | 140 | 0.00410 | 0.1060 | 3.25 | 2.033 | 86.781 |
| | 200 | 0.00290 | 0.0750 | 3.75 | 2.314 | 89.096 |
| Silt | 230 | 0.00250 | 0.0630 | 4.00 | 1.218 | 90.314 |
| | 270 | 0.00210 | 0.0530 | 4.25 | 0.104 | 90.418 |
| | 325 | 0.00170 | 0.0450 | 4.50 | 3.606 | 94.024 |
| Clay | 400 | 0.00150 | 0.0380 | 4.75 | 0.049 | 94.073 |
| | Pan | 0.00002 | 0.0005 | 11.00 | 5.520 | 99.593 |
| | | | | | 0.407 | 100.000 |

| Sorting Statistics (Folk) | | | |
|---------------------------|-------|-------|------|
| Parameter | Trask | Inman | Folk |

| | | | |
|------------|----------------------|--------|---------|
| Median | Medium sand sized | | |
| (in) | 0.0851 | 0.0851 | 0.0851 |
| (mm) | 2.1626 | 2.1626 | 2.1626 |
| Mean | Medium sand sized | | |
| (in) | 0.0858 | 0.0340 | 0.0462 |
| (mm) | 2.1792 | 0.8634 | 1.1726 |
| Sorting | Very poor | | |
| | 3.897 | 2.706 | 2.536 |
| Skewness | Strongly fine skewed | | |
| | 0.485 | 0.490 | 0.496 |
| Kurtosis | Platykurtic | | |
| | 0.272 | 0.442 | 0.815 |
| Percentile | [in.] | [mm] | [phi] |
| 5 | 0.3264 | 8.2916 | -3.0516 |
| 10 | 0.2789 | 7.0831 | -2.8244 |
| 16 | 0.2218 | 5.6330 | -2.4939 |
| 25 | 0.1610 | 4.0892 | -2.0318 |
| 50 | 0.0851 | 2.1626 | -1.1128 |
| 75 | 0.0106 | 0.2692 | 1.8930 |
| 84 | 0.0052 | 0.1323 | 2.9176 |
| 90 | 0.0026 | 0.0661 | 3.9193 |
| 95 | 0.0015 | 0.0371 | 4.7539 |



Mechanical Sieve Particle Size Analysis



| Particle Size Distribution | | | | | | |
|----------------------------|-----------|-------|------|-----|----------|--------|
| | Diameter | | | | Weight % | |
| | [US Mesh] | [in.] | [mm] | [φ] | [Incl.] | [Cum.] |

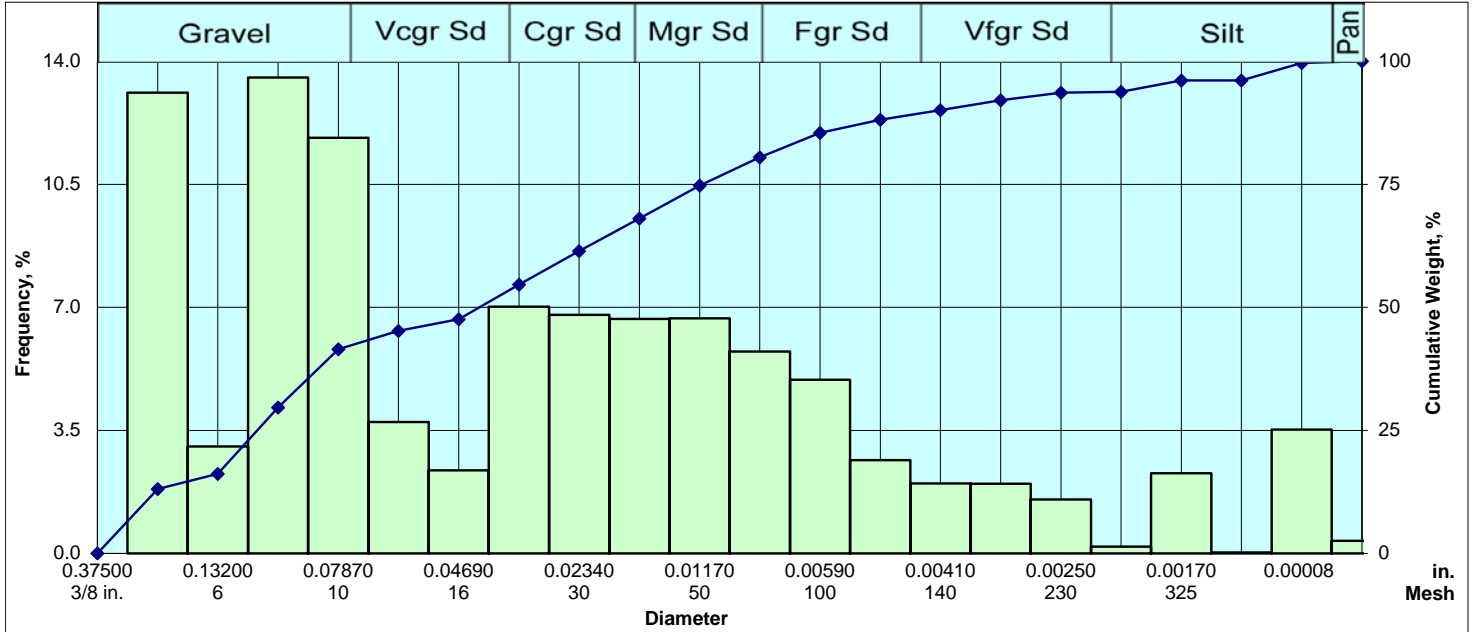
| | | | | | | |
|------------------|---------|---------|--------|-------|--------|---------|
| Gravel | 3/8 in. | 0.37500 | 9.5000 | -3.25 | 0.000 | 0.000 |
| | 4 | 0.18700 | 4.7500 | -2.25 | 10.128 | 10.128 |
| | 6 | 0.13200 | 3.3500 | -1.75 | 4.551 | 14.679 |
| | 8 | 0.09370 | 2.3600 | -1.25 | 12.314 | 26.993 |
| Very Coarse Sand | 10 | 0.07870 | 2.0000 | -1.00 | 9.771 | 36.764 |
| | 14 | 0.05550 | 1.4100 | -0.50 | 5.497 | 42.261 |
| Coarse Sand | 16 | 0.04690 | 1.1800 | -0.25 | 2.110 | 44.372 |
| | 20 | 0.03310 | 0.8500 | 0.25 | 6.661 | 51.033 |
| Medium Sand | 30 | 0.02340 | 0.6000 | 0.75 | 6.153 | 57.186 |
| | 40 | 0.01650 | 0.4250 | 1.25 | 5.738 | 62.923 |
| Fine Sand | 50 | 0.01170 | 0.3000 | 1.75 | 6.229 | 69.152 |
| | 70 | 0.00830 | 0.2120 | 2.25 | 5.738 | 74.890 |
| | 100 | 0.00590 | 0.1500 | 2.75 | 5.104 | 79.994 |
| Very Fine Sand | 120 | 0.00490 | 0.1250 | 3.00 | 3.003 | 82.996 |
| | 140 | 0.00410 | 0.1060 | 3.25 | 1.927 | 84.924 |
| | 200 | 0.00290 | 0.0750 | 3.75 | 2.913 | 87.837 |
| Silt | 230 | 0.00250 | 0.0630 | 4.00 | 2.052 | 89.890 |
| | 270 | 0.00210 | 0.0530 | 4.25 | 1.597 | 91.487 |
| | 325 | 0.00170 | 0.0450 | 4.50 | 0.062 | 91.550 |
| Clay | 400 | 0.00150 | 0.0380 | 4.75 | 2.195 | 93.745 |
| | Pan | 0.00002 | 0.0005 | 11.00 | 5.777 | 99.521 |
| | | | | | 0.479 | 100.000 |

| Sorting Statistics (Folk) | | | |
|---------------------------|-------|-------|------|
| Parameter | Trask | Inman | Folk |

| | | | |
|------------|-------------------|--------|---------|
| Median | Medium sand sized | | |
| (in) | 0.0355 | 0.0355 | 0.0355 |
| (mm) | 0.9012 | 0.9012 | 0.9012 |
| Mean | Medium sand sized | | |
| (in) | 0.0538 | 0.0241 | 0.0274 |
| (mm) | 1.3655 | 0.6111 | 0.6955 |
| Sorting | Very poor | | |
| | 3.459 | 2.408 | 2.356 |
| Skewness | Finely skewed | | |
| | 0.809 | 0.233 | 0.223 |
| Kurtosis | Platykurtic | | |
| | 0.243 | 0.579 | 0.870 |
| Percentile | [in.] | [mm] | [phi] |
| 5 | 0.2817 | 7.1550 | -2.8390 |
| 10 | 0.1894 | 4.8101 | -2.2661 |
| 16 | 0.1277 | 3.2438 | -1.6977 |
| 25 | 0.0992 | 2.5202 | -1.3336 |
| 50 | 0.0355 | 0.9012 | 0.1501 |
| 75 | 0.0083 | 0.2107 | 2.2470 |
| 84 | 0.0045 | 0.1151 | 3.1189 |
| 90 | 0.0025 | 0.0623 | 4.0044 |
| 95 | 0.0014 | 0.0368 | 4.7643 |



Mechanical Sieve Particle Size Analysis



| Particle Size Distribution | | | | | | |
|----------------------------|-----------|-------|------|-----|----------|--------|
| | Diameter | | | | Weight % | |
| | [US Mesh] | [in.] | [mm] | [φ] | [Incl.] | [Cum.] |

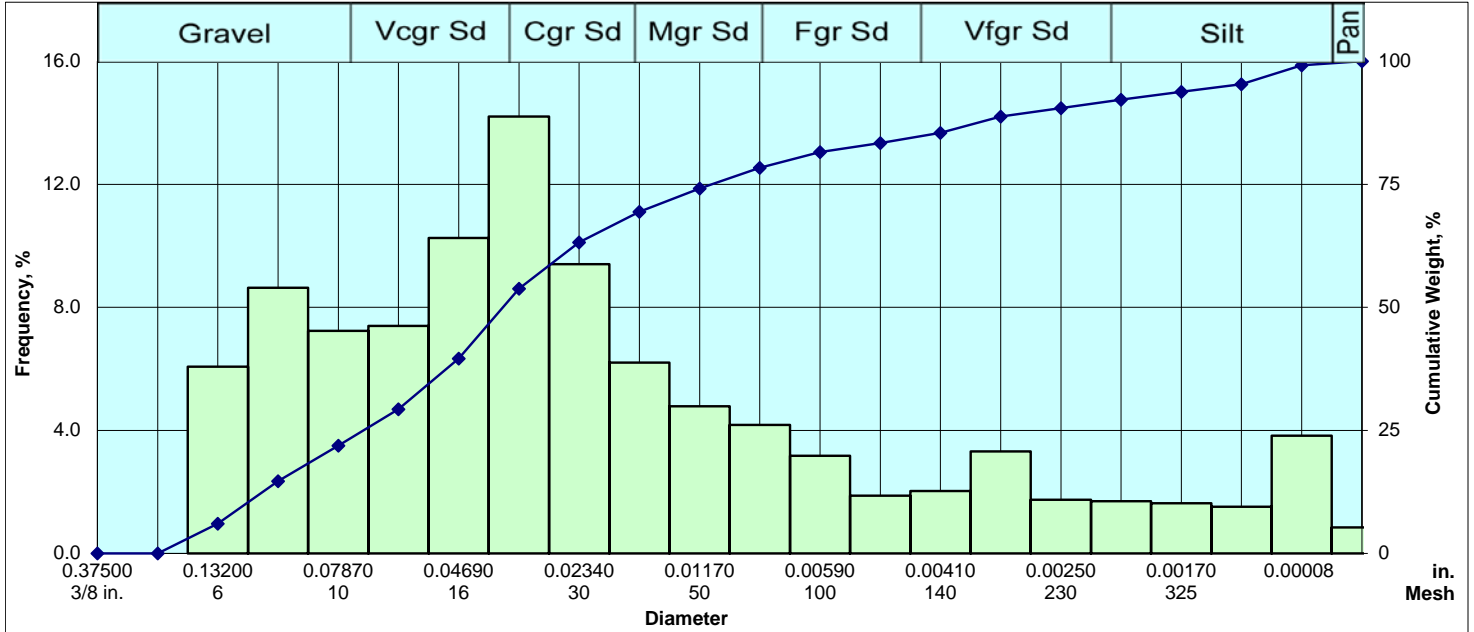
| | | | | | | |
|------------------|---------|---------|--------|-------|--------|---------|
| Gravel | 3/8 in. | 0.37500 | 9.5000 | -3.25 | 0.000 | 0.000 |
| | 4 | 0.18700 | 4.7500 | -2.25 | 13.104 | 13.104 |
| | 6 | 0.13200 | 3.3500 | -1.75 | 3.041 | 16.145 |
| | 8 | 0.09370 | 2.3600 | -1.25 | 13.533 | 29.678 |
| Very Coarse Sand | 10 | 0.07870 | 2.0000 | -1.00 | 11.820 | 41.497 |
| | 14 | 0.05550 | 1.4100 | -0.50 | 3.739 | 45.236 |
| Coarse Sand | 16 | 0.04690 | 1.1800 | -0.25 | 2.364 | 47.600 |
| | 20 | 0.03310 | 0.8500 | 0.25 | 7.019 | 54.619 |
| Medium Sand | 30 | 0.02340 | 0.6000 | 0.75 | 6.788 | 61.406 |
| | 40 | 0.01650 | 0.4250 | 1.25 | 6.672 | 68.078 |
| Fine Sand | 50 | 0.01170 | 0.3000 | 1.75 | 6.685 | 74.763 |
| | 70 | 0.00830 | 0.2120 | 2.25 | 5.743 | 80.506 |
| | 100 | 0.00590 | 0.1500 | 2.75 | 4.942 | 85.448 |
| Very Fine Sand | 120 | 0.00490 | 0.1250 | 3.00 | 2.651 | 88.099 |
| | 140 | 0.00410 | 0.1060 | 3.25 | 1.991 | 90.090 |
| | 200 | 0.00290 | 0.0750 | 3.75 | 1.983 | 92.073 |
| Silt | 230 | 0.00250 | 0.0630 | 4.00 | 1.537 | 93.611 |
| | 270 | 0.00210 | 0.0530 | 4.25 | 0.197 | 93.808 |
| | 325 | 0.00170 | 0.0450 | 4.50 | 2.283 | 96.090 |
| Clay | 400 | 0.00150 | 0.0380 | 4.75 | 0.030 | 96.120 |
| | Pan | 0.00008 | 0.0020 | 9.00 | 3.523 | 99.643 |
| | Pan | 0.00002 | 0.0005 | 11.00 | 0.357 | 100.000 |

| Sorting Statistics (Folk) | | | |
|---------------------------|-------|-------|------|
| Parameter | Trask | Inman | Folk |

| | | | |
|------------|-------------------|--------|---------|
| Median | Medium sand sized | | |
| (in) | 0.0420 | 0.0420 | 0.0420 |
| (mm) | 1.0671 | 1.0671 | 1.0671 |
| Mean | Medium sand sized | | |
| (in) | 0.0590 | 0.0298 | 0.0334 |
| (mm) | 1.4993 | 0.7580 | 0.8496 |
| Sorting | Very poor | | |
| | 3.020 | 2.172 | 2.192 |
| Skewness | Finely skewed | | |
| | 0.839 | 0.227 | 0.223 |
| Kurtosis | Mesokurtic | | |
| | 0.209 | 0.680 | 0.938 |
| Percentile | [in.] | [mm] | [phi] |
| 5 | 0.3027 | 7.6876 | -2.9425 |
| 10 | 0.2313 | 5.8753 | -2.5547 |
| 16 | 0.1345 | 3.4167 | -1.7726 |
| 25 | 0.1064 | 2.7022 | -1.4341 |
| 50 | 0.0420 | 1.0671 | -0.0938 |
| 75 | 0.0117 | 0.2964 | 1.7545 |
| 84 | 0.0066 | 0.1682 | 2.5720 |
| 90 | 0.0042 | 0.1069 | 3.2262 |
| 95 | 0.0019 | 0.0488 | 4.3564 |



Mechanical Sieve Particle Size Analysis



| Particle Size Distribution | | | | | | |
|----------------------------|-----------|-------|------|-----|----------|--------|
| | Diameter | | | | Weight % | |
| | [US Mesh] | [in.] | [mm] | [φ] | [Incl.] | [Cum.] |

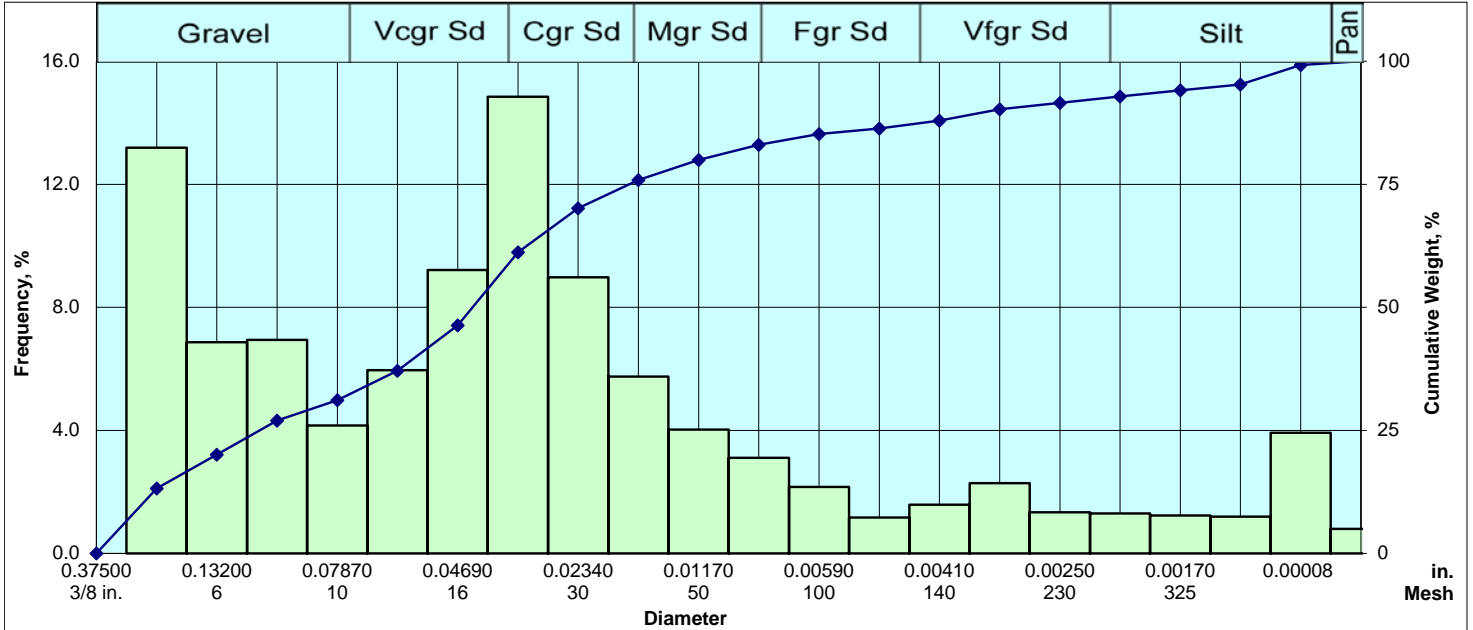
| | | | | | | |
|------------------|---------|---------|--------|-------|--------|---------|
| Gravel | 3/8 in. | 0.37500 | 9.5000 | -3.25 | 0.000 | 0.000 |
| | 4 | 0.18700 | 4.7500 | -2.25 | 0.000 | 0.000 |
| | 6 | 0.13200 | 3.3500 | -1.75 | 6.066 | 6.066 |
| | 8 | 0.09370 | 2.3600 | -1.25 | 8.633 | 14.699 |
| Very Coarse Sand | 10 | 0.07870 | 2.0000 | -1.00 | 7.233 | 21.932 |
| | 14 | 0.05550 | 1.4100 | -0.50 | 7.397 | 29.328 |
| Coarse Sand | 16 | 0.04690 | 1.1800 | -0.25 | 10.254 | 39.582 |
| | 20 | 0.03310 | 0.8500 | 0.25 | 14.201 | 53.783 |
| Medium Sand | 30 | 0.02340 | 0.6000 | 0.75 | 9.404 | 63.188 |
| | 40 | 0.01650 | 0.4250 | 1.25 | 6.204 | 69.392 |
| Fine Sand | 50 | 0.01170 | 0.3000 | 1.75 | 4.780 | 74.172 |
| | 70 | 0.00830 | 0.2120 | 2.25 | 4.176 | 78.348 |
| | 100 | 0.00590 | 0.1500 | 2.75 | 3.174 | 81.522 |
| Very Fine Sand | 120 | 0.00490 | 0.1250 | 3.00 | 1.879 | 83.401 |
| | 140 | 0.00410 | 0.1060 | 3.25 | 2.033 | 85.433 |
| | 200 | 0.00290 | 0.0750 | 3.75 | 3.312 | 88.745 |
| Silt | 230 | 0.00250 | 0.0630 | 4.00 | 1.743 | 90.488 |
| | 270 | 0.00210 | 0.0530 | 4.25 | 1.700 | 92.189 |
| | 325 | 0.00170 | 0.0450 | 4.50 | 1.628 | 93.817 |
| Clay | 400 | 0.00150 | 0.0380 | 4.75 | 1.517 | 95.334 |
| | Pan | 0.00002 | 0.0005 | 11.00 | 0.841 | 100.000 |

| Sorting Statistics (Folk) | | | |
|---------------------------|-------|-------|------|
| Parameter | Trask | Inman | Folk |

| | | | |
|------------|----------------------|--------|---------|
| Median | Medium sand sized | | |
| (in) | 0.0488 | 0.0488 | 0.0488 |
| (mm) | 1.2386 | 1.2386 | 1.2386 |
| Mean | Medium sand sized | | |
| (in) | 0.0514 | 0.0265 | 0.0325 |
| (mm) | 1.3054 | 0.6726 | 0.8244 |
| Sorting | Very poor | | |
| | 2.350 | 2.238 | 2.164 |
| Skewness | Strongly fine skewed | | |
| | 0.759 | 0.394 | 0.382 |
| Kurtosis | Lepokurtic | | |
| | 0.225 | 0.542 | 1.147 |
| Percentile | [in.] | [mm] | [phi] |
| 5 | 0.2199 | 5.5849 | -2.4815 |
| 10 | 0.1619 | 4.1121 | -2.0399 |
| 16 | 0.1249 | 3.1719 | -1.6654 |
| 25 | 0.0870 | 2.2107 | -1.1445 |
| 50 | 0.0488 | 1.2386 | -0.3087 |
| 75 | 0.0158 | 0.4002 | 1.3211 |
| 84 | 0.0056 | 0.1426 | 2.8097 |
| 90 | 0.0033 | 0.0837 | 3.5789 |
| 95 | 0.0018 | 0.0468 | 4.4186 |



Mechanical Sieve Particle Size Analysis



| Particle Size Distribution | | | | | | |
|----------------------------|-----------|-------|------|-----|----------|--------|
| | Diameter | | | | Weight % | |
| | [US Mesh] | [in.] | [mm] | [φ] | [Incl.] | [Cum.] |

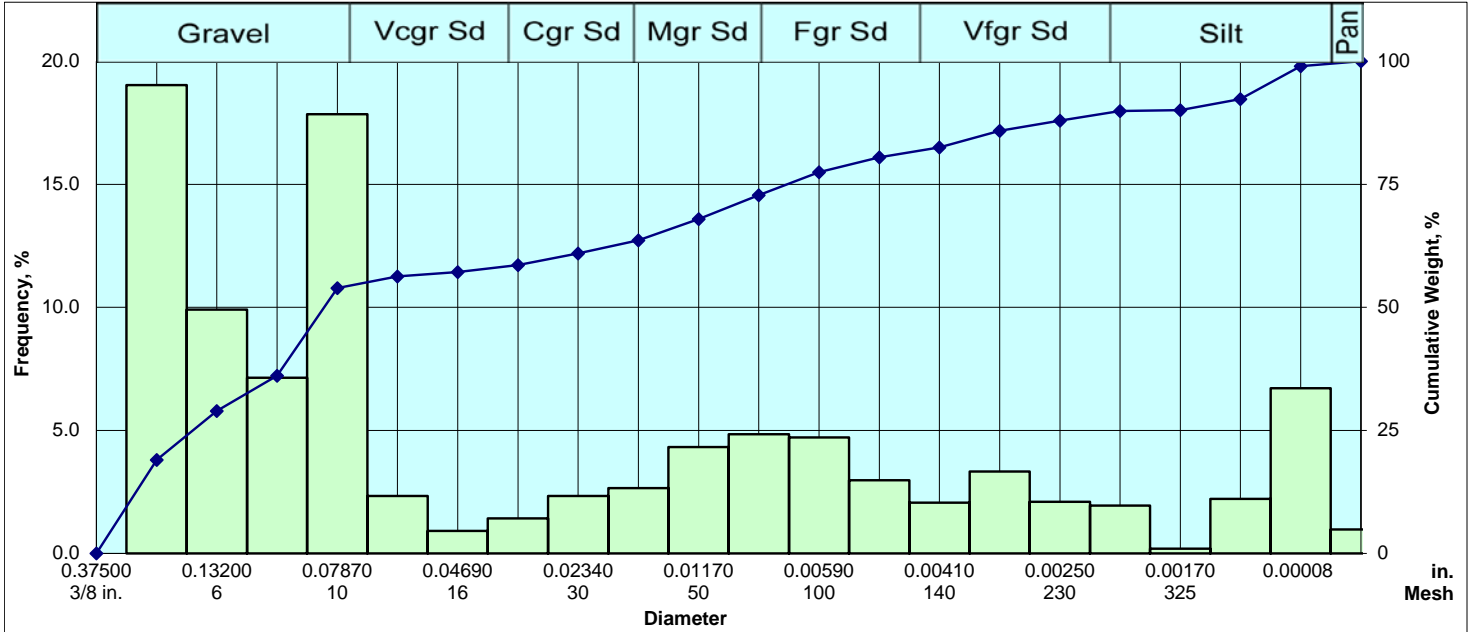
| | | | | | | |
|------------------|---------|---------|--------|-------|--------|---------|
| Gravel | 3/8 in. | 0.37500 | 9.5000 | -3.25 | 0.000 | 0.000 |
| | 4 | 0.18700 | 4.7500 | -2.25 | 13.187 | 13.187 |
| | 6 | 0.13200 | 3.3500 | -1.75 | 6.868 | 20.055 |
| | 8 | 0.09370 | 2.3600 | -1.25 | 6.937 | 26.992 |
| Very Coarse Sand | 10 | 0.07870 | 2.0000 | -1.00 | 4.155 | 31.147 |
| | 14 | 0.05550 | 1.4100 | -0.50 | 5.959 | 37.106 |
| Coarse Sand | 16 | 0.04690 | 1.1800 | -0.25 | 9.215 | 46.321 |
| | 20 | 0.03310 | 0.8500 | 0.25 | 14.846 | 61.167 |
| Medium Sand | 30 | 0.02340 | 0.6000 | 0.75 | 8.979 | 70.146 |
| | 40 | 0.01650 | 0.4250 | 1.25 | 5.746 | 75.891 |
| Fine Sand | 50 | 0.01170 | 0.3000 | 1.75 | 4.027 | 79.919 |
| | 70 | 0.00830 | 0.2120 | 2.25 | 3.112 | 83.031 |
| | 100 | 0.00590 | 0.1500 | 2.75 | 2.158 | 85.189 |
| Very Fine Sand | 120 | 0.00490 | 0.1250 | 3.00 | 1.166 | 86.355 |
| | 140 | 0.00410 | 0.1060 | 3.25 | 1.586 | 87.941 |
| | 200 | 0.00290 | 0.0750 | 3.75 | 2.282 | 90.223 |
| Silt | 230 | 0.00250 | 0.0630 | 4.00 | 1.338 | 91.560 |
| | 270 | 0.00210 | 0.0530 | 4.25 | 1.296 | 92.856 |
| | 325 | 0.00170 | 0.0450 | 4.50 | 1.232 | 94.088 |
| Clay | 400 | 0.00150 | 0.0380 | 4.75 | 1.197 | 95.285 |
| | Pan | 0.00002 | 0.0005 | 11.00 | 0.795 | 100.000 |

| Sorting Statistics (Folk) | | | |
|---------------------------|-------|-------|------|
| Parameter | Trask | Inman | Folk |

| | | | |
|-------------------|--------------------------|-------------|--------------|
| Median | Medium sand sized | | |
| (in) | 0.0530 | 0.0530 | 0.0530 |
| (mm) | 1.3455 | 1.3455 | 1.3455 |
| Mean | Medium sand sized | | |
| (in) | 0.0864 | 0.0552 | 0.0545 |
| (mm) | 2.1954 | 1.4028 | 1.3834 |
| Sorting | Very poor | | |
| | 2.424 | 2.429 | 2.452 |
| Skewness | Near symmetrical | | |
| | 1.151 | -0.025 | 0.081 |
| Kurtosis | Lepokurtic | | |
| | 0.142 | 0.681 | 1.310 |
| Percentile | [in.] | [mm] | [phi] |
| 5 | 0.5298 | 13.4578 | -3.7504 |
| 10 | 0.4347 | 11.0406 | -3.4647 |
| 16 | 0.2974 | 7.5544 | -2.9173 |
| 25 | 0.1477 | 3.7520 | -1.9077 |
| 50 | 0.0530 | 1.3455 | -0.4281 |
| 75 | 0.0251 | 0.6388 | 0.6466 |
| 84 | 0.0103 | 0.2605 | 1.9407 |
| 90 | 0.0042 | 0.1079 | 3.2128 |
| 95 | 0.0018 | 0.0469 | 4.4141 |



Mechanical Sieve Particle Size Analysis



| Particle Size Distribution | | | | | | |
|----------------------------|-----------|-------|------|-----|----------|--------|
| | Diameter | | | | Weight % | |
| | [US Mesh] | [in.] | [mm] | [φ] | [Incl.] | [Cum.] |

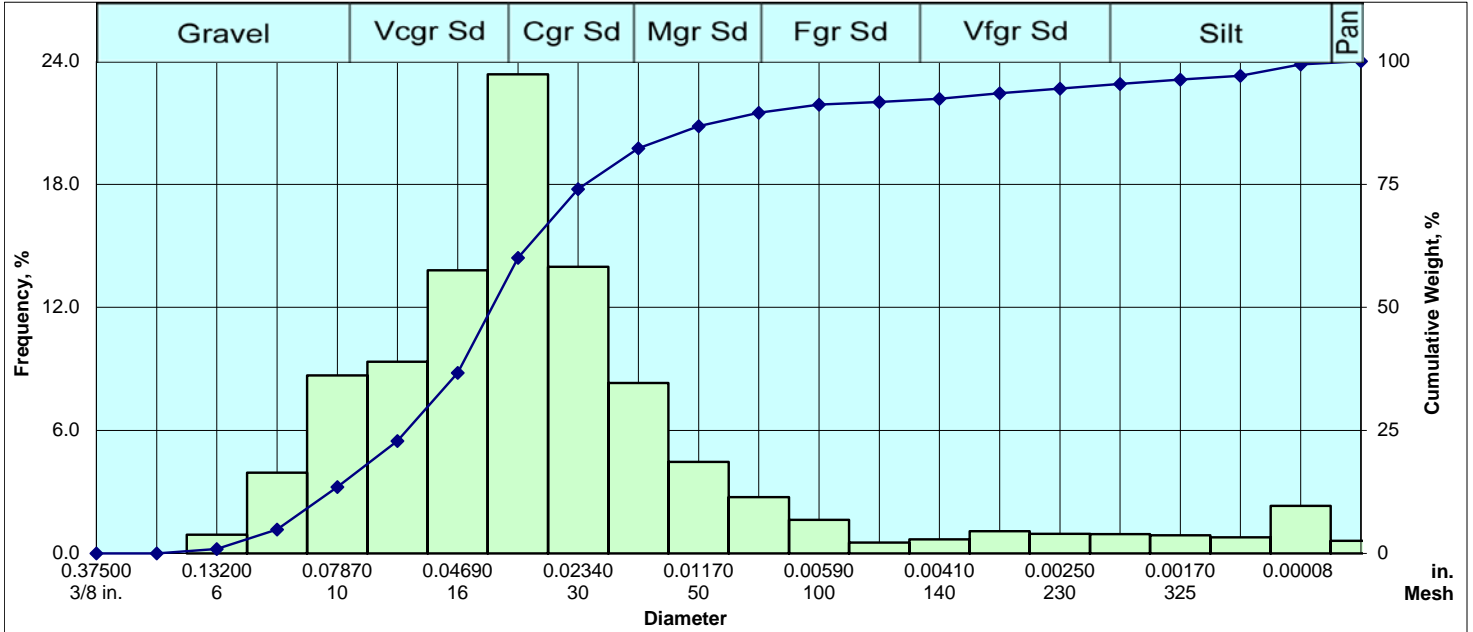
| | | | | | | |
|------------------|---------|---------|--------|-------|--------|---------|
| Gravel | 3/8 in. | 0.37500 | 9.5000 | -3.25 | 0.000 | 0.000 |
| | 4 | 0.18700 | 4.7500 | -2.25 | 19.033 | 19.033 |
| | 6 | 0.13200 | 3.3500 | -1.75 | 9.913 | 28.945 |
| | 8 | 0.09370 | 2.3600 | -1.25 | 7.137 | 36.082 |
| Very Coarse Sand | 10 | 0.07870 | 2.0000 | -1.00 | 17.843 | 53.925 |
| | 14 | 0.05550 | 1.4100 | -0.50 | 2.339 | 56.265 |
| Coarse Sand | 16 | 0.04690 | 1.1800 | -0.25 | 0.912 | 57.177 |
| | 20 | 0.03310 | 0.8500 | 0.25 | 1.427 | 58.604 |
| Medium Sand | 30 | 0.02340 | 0.6000 | 0.75 | 2.339 | 60.944 |
| | 40 | 0.01650 | 0.4250 | 1.25 | 2.657 | 63.600 |
| Fine Sand | 50 | 0.01170 | 0.3000 | 1.75 | 4.322 | 67.922 |
| | 70 | 0.00830 | 0.2120 | 2.25 | 4.837 | 72.760 |
| | 100 | 0.00590 | 0.1500 | 2.75 | 4.718 | 77.478 |
| Very Fine Sand | 120 | 0.00490 | 0.1250 | 3.00 | 2.974 | 80.452 |
| | 140 | 0.00410 | 0.1060 | 3.25 | 2.062 | 82.514 |
| | 200 | 0.00290 | 0.0750 | 3.75 | 3.331 | 85.845 |
| Silt | 230 | 0.00250 | 0.0630 | 4.00 | 2.102 | 87.946 |
| | 270 | 0.00210 | 0.0530 | 4.25 | 1.943 | 89.889 |
| | 325 | 0.00170 | 0.0450 | 4.50 | 0.198 | 90.087 |
| Clay | 400 | 0.00150 | 0.0380 | 4.75 | 2.220 | 92.308 |
| | | 0.00008 | 0.0020 | 9.00 | 6.713 | 99.020 |
| | Pan | 0.00002 | 0.0005 | 11.00 | 0.980 | 100.000 |

| Sorting Statistics (Folk) | | | |
|---------------------------|-------|-------|------|
| Parameter | Trask | Inman | Folk |

| | | | |
|------------|----------------------|--------|---------|
| Median | Coarse sand sized | | |
| (in) | 0.0819 | 0.0819 | 0.0819 |
| (mm) | 2.0792 | 2.0792 | 2.0792 |
| Mean | Medium sand sized | | |
| (in) | 0.0805 | 0.0280 | 0.0401 |
| (mm) | 2.0449 | 0.7124 | 1.0181 |
| Sorting | Very poor | | |
| | 4.626 | 2.950 | 2.664 |
| Skewness | Strongly fine skewed | | |
| | 0.406 | 0.524 | 0.508 |
| Kurtosis | Platykurtic | | |
| | 0.268 | 0.329 | 0.727 |
| Percentile | [in.] | [mm] | [phi] |
| 5 | 0.3249 | 8.2521 | -3.0448 |
| 10 | 0.2758 | 7.0043 | -2.8082 |
| 16 | 0.2168 | 5.5068 | -2.4612 |
| 25 | 0.1538 | 3.9072 | -1.9661 |
| 50 | 0.0819 | 2.0792 | -1.0560 |
| 75 | 0.0072 | 0.1826 | 2.4535 |
| 84 | 0.0036 | 0.0922 | 3.4396 |
| 90 | 0.0019 | 0.0485 | 4.3653 |
| 95 | 0.0014 | 0.0359 | 4.7999 |



Mechanical Sieve Particle Size Analysis



| Particle Size Distribution | | | | | | |
|----------------------------|-----------|-------|------|-----|----------|--------|
| | Diameter | | | | Weight % | |
| | [US Mesh] | [in.] | [mm] | [φ] | [Incl.] | [Cum.] |

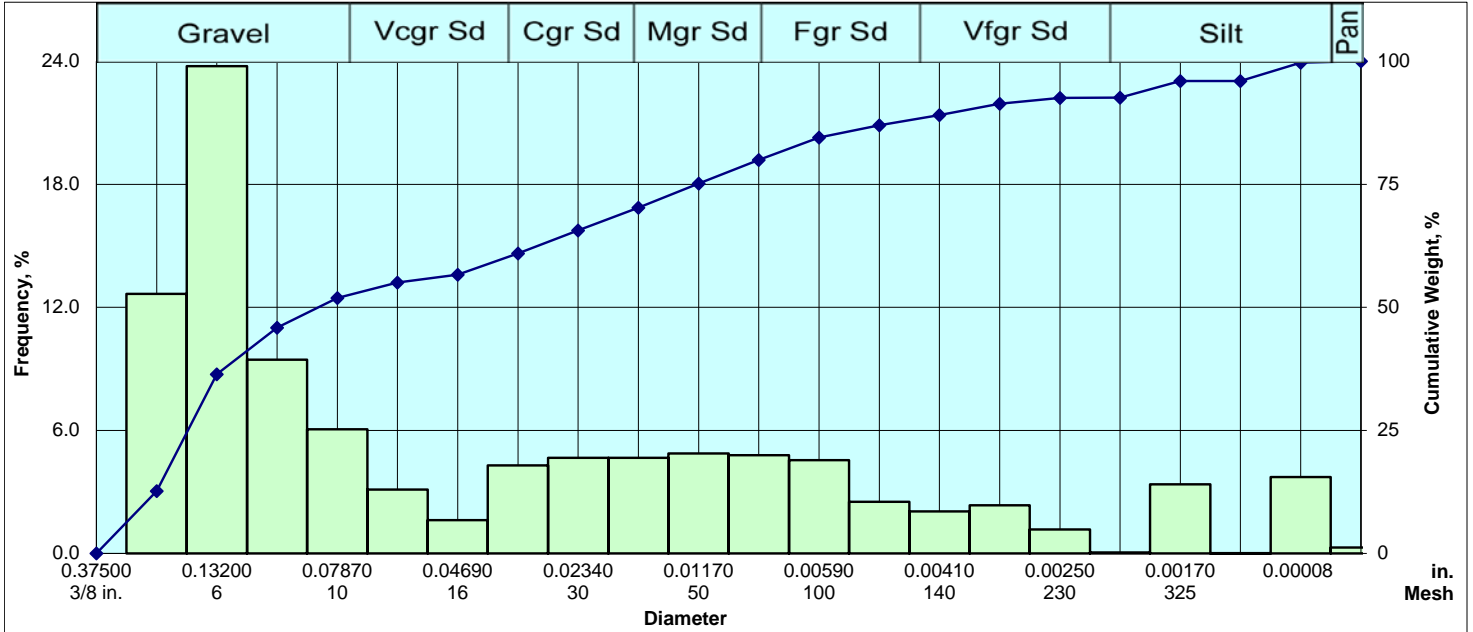
| | | | | | | |
|------------------|---------|---------|--------|-------|--------|---------|
| Gravel | 3/8 in. | 0.37500 | 9.5000 | -3.25 | 0.000 | 0.000 |
| | 4 | 0.18700 | 4.7500 | -2.25 | 0.000 | 0.000 |
| | 6 | 0.13200 | 3.3500 | -1.75 | 0.914 | 0.914 |
| | 8 | 0.09370 | 2.3600 | -1.25 | 3.931 | 4.845 |
| Very Coarse Sand | 10 | 0.07870 | 2.0000 | -1.00 | 8.684 | 13.528 |
| | 14 | 0.05550 | 1.4100 | -0.50 | 9.342 | 22.870 |
| Coarse Sand | 16 | 0.04690 | 1.1800 | -0.25 | 13.807 | 36.677 |
| | 20 | 0.03310 | 0.8500 | 0.25 | 23.366 | 60.042 |
| Medium Sand | 30 | 0.02340 | 0.6000 | 0.75 | 13.976 | 74.018 |
| | 40 | 0.01650 | 0.4250 | 1.25 | 8.313 | 82.332 |
| Fine Sand | 50 | 0.01170 | 0.3000 | 1.75 | 4.459 | 86.790 |
| | 70 | 0.00830 | 0.2120 | 2.25 | 2.748 | 89.539 |
| | 100 | 0.00590 | 0.1500 | 2.75 | 1.634 | 91.173 |
| Very Fine Sand | 120 | 0.00490 | 0.1250 | 3.00 | 0.534 | 91.707 |
| | 140 | 0.00410 | 0.1060 | 3.25 | 0.682 | 92.389 |
| | 200 | 0.00290 | 0.0750 | 3.75 | 1.089 | 93.478 |
| Silt | 230 | 0.00250 | 0.0630 | 4.00 | 0.956 | 94.434 |
| | 270 | 0.00210 | 0.0530 | 4.25 | 0.945 | 95.379 |
| | 325 | 0.00170 | 0.0450 | 4.50 | 0.886 | 96.265 |
| Clay | 400 | 0.00150 | 0.0380 | 4.75 | 0.792 | 97.057 |
| | Pan | 0.00002 | 0.0005 | 11.00 | 0.621 | 100.000 |

| Sorting Statistics (Folk) | | | |
|---------------------------|-------|-------|------|
| Parameter | Trask | Inman | Folk |

| | | | |
|-------------------|-----------------------------|-------------|--------------|
| Median | Medium sand sized | | |
| (in) | 0.0502 | 0.0502 | 0.0502 |
| (mm) | 1.2746 | 1.2746 | 1.2746 |
| Mean | Medium sand sized | | |
| (in) | 0.0537 | 0.0433 | 0.0455 |
| (mm) | 1.3640 | 1.1003 | 1.1555 |
| Sorting | Poor | | |
| | 1.525 | 1.042 | 1.372 |
| Skewness | Strongly fine skewed | | |
| | 0.982 | 0.204 | 0.355 |
| Kurtosis | Very leptokurtic | | |
| | 0.219 | 1.697 | 1.892 |
| Percentile | [in.] | [mm] | [phi] |
| 5 | 0.1312 | 3.3323 | -1.7365 |
| 10 | 0.1088 | 2.7623 | -1.4658 |
| 16 | 0.0892 | 2.2647 | -1.1794 |
| 25 | 0.0751 | 1.9074 | -0.9316 |
| 50 | 0.0502 | 1.2746 | -0.3500 |
| 75 | 0.0323 | 0.8205 | 0.2855 |
| 84 | 0.0210 | 0.5345 | 0.9037 |
| 90 | 0.0108 | 0.2752 | 1.8616 |
| 95 | 0.0027 | 0.0678 | 3.8822 |



Mechanical Sieve Particle Size Analysis



| Particle Size Distribution | | | | | | |
|----------------------------|-----------|-------|------|-----|----------|--------|
| | Diameter | | | | Weight % | |
| | [US Mesh] | [in.] | [mm] | [φ] | [Incl.] | [Cum.] |

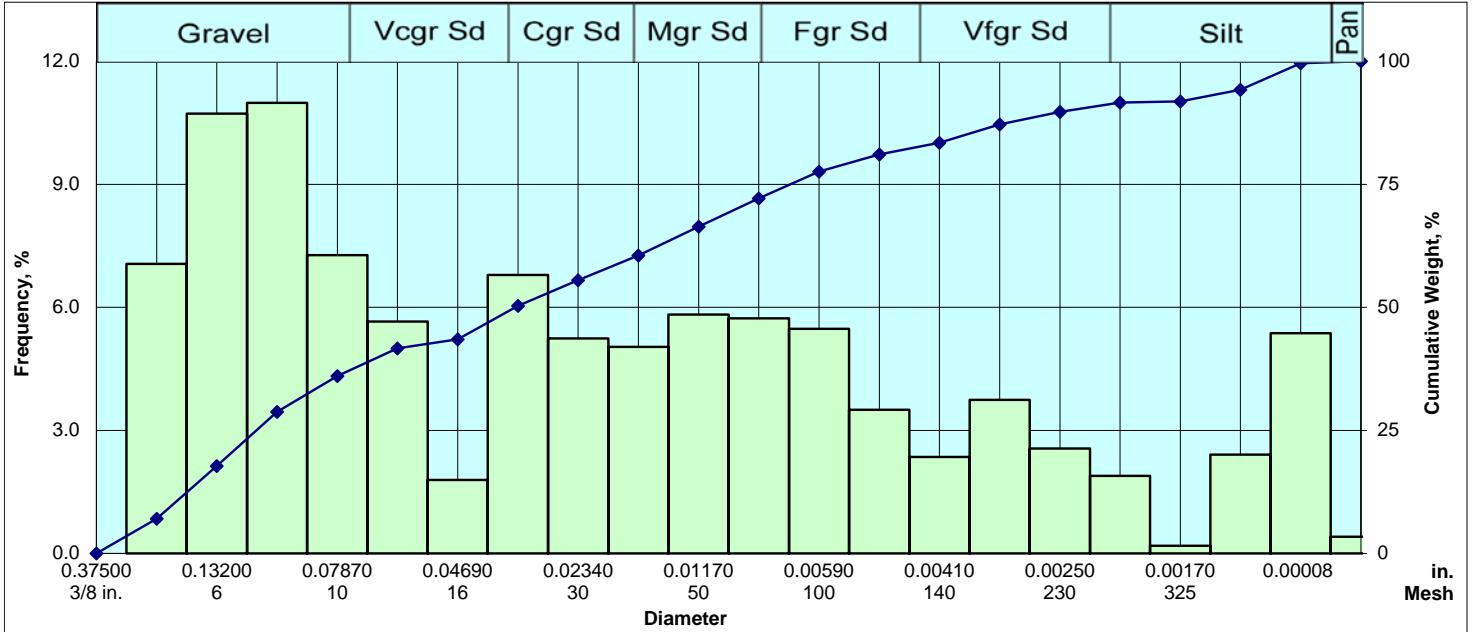
| | | | | | | |
|------------------|---------|---------|--------|-------|--------|---------|
| Gravel | 3/8 in. | 0.37500 | 9.5000 | -3.25 | 0.000 | 0.000 |
| | 4 | 0.18700 | 4.7500 | -2.25 | 12.660 | 12.660 |
| | 6 | 0.13200 | 3.3500 | -1.75 | 23.753 | 36.413 |
| | 8 | 0.09370 | 2.3600 | -1.25 | 9.445 | 45.858 |
| Very Coarse Sand | 10 | 0.07870 | 2.0000 | -1.00 | 6.049 | 51.907 |
| | 14 | 0.05550 | 1.4100 | -0.50 | 3.117 | 55.024 |
| Coarse Sand | 16 | 0.04690 | 1.1800 | -0.25 | 1.630 | 56.654 |
| | 20 | 0.03310 | 0.8500 | 0.25 | 4.288 | 60.942 |
| Medium Sand | 30 | 0.02340 | 0.6000 | 0.75 | 4.662 | 65.604 |
| | 40 | 0.01650 | 0.4250 | 1.25 | 4.662 | 70.266 |
| Fine Sand | 50 | 0.01170 | 0.3000 | 1.75 | 4.875 | 75.142 |
| | 70 | 0.00830 | 0.2120 | 2.25 | 4.787 | 79.928 |
| | 100 | 0.00590 | 0.1500 | 2.75 | 4.546 | 84.474 |
| Very Fine Sand | 120 | 0.00490 | 0.1250 | 3.00 | 2.520 | 86.994 |
| | 140 | 0.00410 | 0.1060 | 3.25 | 2.046 | 89.040 |
| | 200 | 0.00290 | 0.0750 | 3.75 | 2.353 | 91.393 |
| Silt | 230 | 0.00250 | 0.0630 | 4.00 | 1.176 | 92.569 |
| | 270 | 0.00210 | 0.0530 | 4.25 | 0.044 | 92.613 |
| | 325 | 0.00170 | 0.0450 | 4.50 | 3.374 | 95.987 |
| Clay | 400 | 0.00150 | 0.0380 | 4.75 | 0.010 | 95.997 |
| | Pan | 0.00002 | 0.0005 | 11.00 | 0.281 | 100.000 |

| Sorting Statistics (Folk) | | | |
|---------------------------|-------|-------|------|
| Parameter | Trask | Inman | Folk |

| | | | |
|------------|----------------------|--------|---------|
| Median | Coarse sand sized | | |
| (in) | 0.0832 | 0.0832 | 0.0832 |
| (mm) | 2.1135 | 2.1135 | 2.1135 |
| Mean | Medium sand sized | | |
| (in) | 0.0852 | 0.0332 | 0.0451 |
| (mm) | 2.1632 | 0.8440 | 1.1462 |
| Sorting | Very poor | | |
| | 3.640 | 2.431 | 2.327 |
| Skewness | Strongly fine skewed | | |
| | 0.523 | 0.545 | 0.520 |
| Kurtosis | Platykurtic | | |
| | 0.329 | 0.508 | 0.806 |
| Percentile | [in.] | [mm] | [phi] |
| 5 | 0.3002 | 7.6241 | -2.9306 |
| 10 | 0.2263 | 5.7481 | -2.5231 |
| 16 | 0.1793 | 4.5532 | -2.1869 |
| 25 | 0.1584 | 4.0227 | -2.0082 |
| 50 | 0.0832 | 2.1135 | -1.0796 |
| 75 | 0.0120 | 0.3036 | 1.7196 |
| 84 | 0.0062 | 0.1565 | 2.6761 |
| 90 | 0.0037 | 0.0934 | 3.4212 |
| 95 | 0.0019 | 0.0473 | 4.4008 |



Mechanical Sieve Particle Size Analysis



| Particle Size Distribution | | | | | | |
|----------------------------|-----------|-------|------|-----|----------|--------|
| | Diameter | | | | Weight % | |
| | [US Mesh] | [in.] | [mm] | [φ] | [Incl.] | [Cum.] |

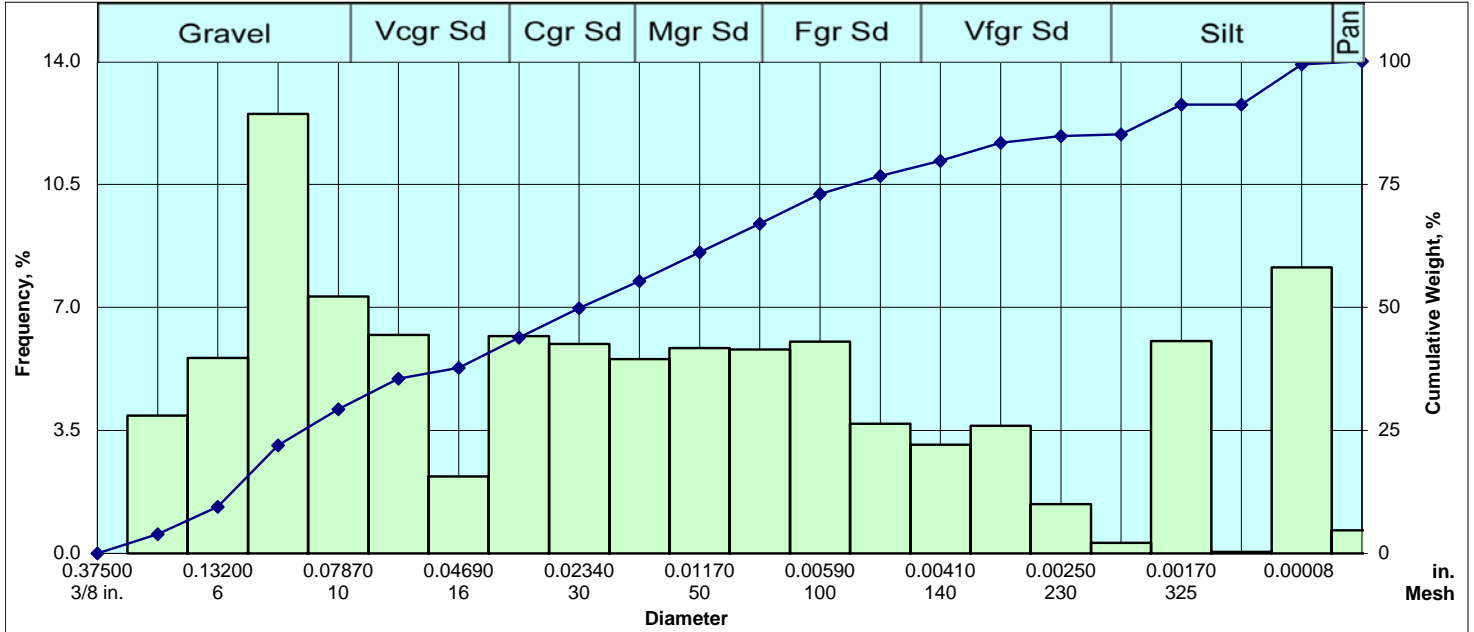
| | | | | | | |
|------------------|---------|---------|--------|-------|--------|---------|
| Gravel | 3/8 in. | 0.37500 | 9.5000 | -3.25 | 0.000 | 0.000 |
| | 4 | 0.18700 | 4.7500 | -2.25 | 7.062 | 7.062 |
| | 6 | 0.13200 | 3.3500 | -1.75 | 10.723 | 17.785 |
| | 8 | 0.09370 | 2.3600 | -1.25 | 10.985 | 28.770 |
| Very Coarse Sand | 10 | 0.07870 | 2.0000 | -1.00 | 7.271 | 36.041 |
| | 14 | 0.05550 | 1.4100 | -0.50 | 5.655 | 41.696 |
| Coarse Sand | 16 | 0.04690 | 1.1800 | -0.25 | 1.794 | 43.490 |
| | 20 | 0.03310 | 0.8500 | 0.25 | 6.790 | 50.280 |
| Medium Sand | 30 | 0.02340 | 0.6000 | 0.75 | 5.241 | 55.521 |
| | 40 | 0.01650 | 0.4250 | 1.25 | 5.032 | 60.553 |
| Fine Sand | 50 | 0.01170 | 0.3000 | 1.75 | 5.822 | 66.375 |
| | 70 | 0.00830 | 0.2120 | 2.25 | 5.733 | 72.109 |
| | 100 | 0.00590 | 0.1500 | 2.75 | 5.477 | 77.585 |
| Very Fine Sand | 120 | 0.00490 | 0.1250 | 3.00 | 3.500 | 81.085 |
| | 140 | 0.00410 | 0.1060 | 3.25 | 2.349 | 83.434 |
| | 200 | 0.00290 | 0.0750 | 3.75 | 3.745 | 87.179 |
| Silt | 230 | 0.00250 | 0.0630 | 4.00 | 2.558 | 89.737 |
| | 270 | 0.00210 | 0.0530 | 4.25 | 1.888 | 91.625 |
| | 325 | 0.00170 | 0.0450 | 4.50 | 0.188 | 91.814 |
| Clay | 400 | 0.00150 | 0.0380 | 4.75 | 2.406 | 94.220 |
| | Pan | 0.00002 | 0.0005 | 11.00 | 0.408 | 100.000 |

| Sorting Statistics (Folk) | | | |
|---------------------------|-------|-------|------|
| Parameter | Trask | Inman | Folk |

| | | | |
|-------------------|--------------------------|-------------|--------------|
| Median | Medium sand sized | | |
| (in) | 0.0340 | 0.0340 | 0.0340 |
| (mm) | 0.8636 | 0.8636 | 0.8636 |
| Mean | Medium sand sized | | |
| (in) | 0.0567 | 0.0237 | 0.0267 |
| (mm) | 1.4395 | 0.6025 | 0.6793 |
| Sorting | Very poor | | |
| | 3.881 | 2.572 | 2.402 |
| Skewness | Finely skewed | | |
| | 0.806 | 0.202 | 0.217 |
| Kurtosis | Platykurtic | | |
| | 0.293 | 0.432 | 0.772 |
| Percentile | [in.] | [mm] | [phi] |
| 5 | 0.2416 | 6.1368 | -2.6175 |
| 10 | 0.1719 | 4.3664 | -2.1264 |
| 16 | 0.1411 | 3.5831 | -1.8412 |
| 25 | 0.1063 | 2.6998 | -1.4328 |
| 50 | 0.0340 | 0.8636 | 0.2116 |
| 75 | 0.0071 | 0.1793 | 2.4798 |
| 84 | 0.0040 | 0.1013 | 3.3031 |
| 90 | 0.0024 | 0.0616 | 4.0208 |
| 95 | 0.0015 | 0.0372 | 4.7489 |



Mechanical Sieve Particle Size Analysis



| Particle Size Distribution | | | | | | |
|----------------------------|-----------|-------|------|-----|----------|--------|
| | Diameter | | | | Weight % | |
| | [US Mesh] | [in.] | [mm] | [φ] | [Incl.] | [Cum.] |

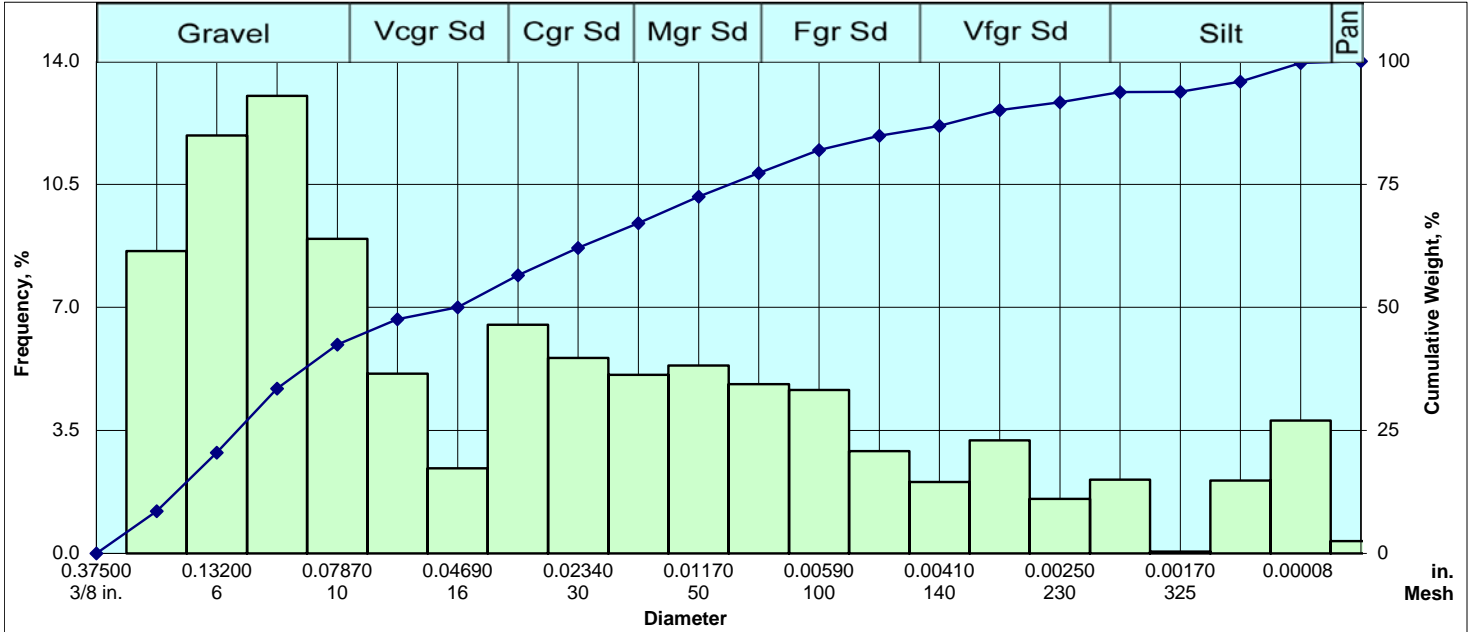
| | | | | | | |
|------------------|---------|---------|--------|-------|--------|--------|
| Gravel | 3/8 in. | 0.37500 | 9.5000 | -3.25 | 0.000 | 0.000 |
| | 4 | 0.18700 | 4.7500 | -2.25 | 3.919 | 3.919 |
| | 6 | 0.13200 | 3.3500 | -1.75 | 5.560 | 9.479 |
| | 8 | 0.09370 | 2.3600 | -1.25 | 12.497 | 21.976 |
| Very Coarse Sand | 10 | 0.07870 | 2.0000 | -1.00 | 7.308 | 29.284 |
| | 14 | 0.05550 | 1.4100 | -0.50 | 6.212 | 35.496 |
| Coarse Sand | 16 | 0.04690 | 1.1800 | -0.25 | 2.187 | 37.683 |
| | 20 | 0.03310 | 0.8500 | 0.25 | 6.185 | 43.868 |
| Medium Sand | 30 | 0.02340 | 0.6000 | 0.75 | 5.957 | 49.825 |
| | 40 | 0.01650 | 0.4250 | 1.25 | 5.523 | 55.348 |
| Fine Sand | 50 | 0.01170 | 0.3000 | 1.75 | 5.841 | 61.189 |
| | 70 | 0.00830 | 0.2120 | 2.25 | 5.799 | 66.988 |
| | 100 | 0.00590 | 0.1500 | 2.75 | 6.026 | 73.014 |
| Very Fine Sand | 120 | 0.00490 | 0.1250 | 3.00 | 3.686 | 76.700 |
| | 140 | 0.00410 | 0.1060 | 3.25 | 3.093 | 79.792 |
| | 200 | 0.00290 | 0.0750 | 3.75 | 3.627 | 83.420 |
| Silt | 230 | 0.00250 | 0.0630 | 4.00 | 1.403 | 84.823 |
| | 270 | 0.00210 | 0.0530 | 4.25 | 0.302 | 85.125 |
| | 325 | 0.00170 | 0.0450 | 4.50 | 6.037 | 91.162 |
| Clay | 400 | 0.00150 | 0.0380 | 4.75 | 0.048 | 91.209 |
| | Pan | 0.00002 | 0.0005 | 11.00 | 8.133 | 99.342 |

| Sorting Statistics (Folk) | | | |
|---------------------------|-------|-------|------|
| Parameter | Trask | Inman | Folk |

| | | | |
|------------|-------------------|--------|---------|
| Median | Medium sand sized | | |
| (in) | 0.0234 | 0.0234 | 0.0234 |
| (mm) | 0.5945 | 0.5945 | 0.5945 |
| Mean | Medium sand sized | | |
| (in) | 0.0462 | 0.0175 | 0.0193 |
| (mm) | 1.1738 | 0.4455 | 0.4904 |
| Sorting | Very poor | | |
| | 4.024 | 2.669 | 2.392 |
| Skewness | Finely skewed | | |
| | 0.924 | 0.156 | 0.161 |
| Kurtosis | Platykurtic | | |
| | 0.318 | 0.308 | 0.712 |
| Percentile | [in.] | [mm] | [phi] |
| 5 | 0.1763 | 4.4777 | -2.1628 |
| 10 | 0.1303 | 3.3087 | -1.7263 |
| 16 | 0.1116 | 2.8334 | -1.5025 |
| 25 | 0.0870 | 2.2110 | -1.1447 |
| 50 | 0.0234 | 0.5945 | 0.7503 |
| 75 | 0.0054 | 0.1365 | 2.8727 |
| 84 | 0.0028 | 0.0700 | 3.8357 |
| 90 | 0.0018 | 0.0465 | 4.4254 |
| 95 | 0.0014 | 0.0354 | 4.8196 |



Mechanical Sieve Particle Size Analysis



| Particle Size Distribution | | | | | | |
|----------------------------|-----------|-------|------|-----|----------|--------|
| | Diameter | | | | Weight % | |
| | [US Mesh] | [in.] | [mm] | [φ] | [Incl.] | [Cum.] |

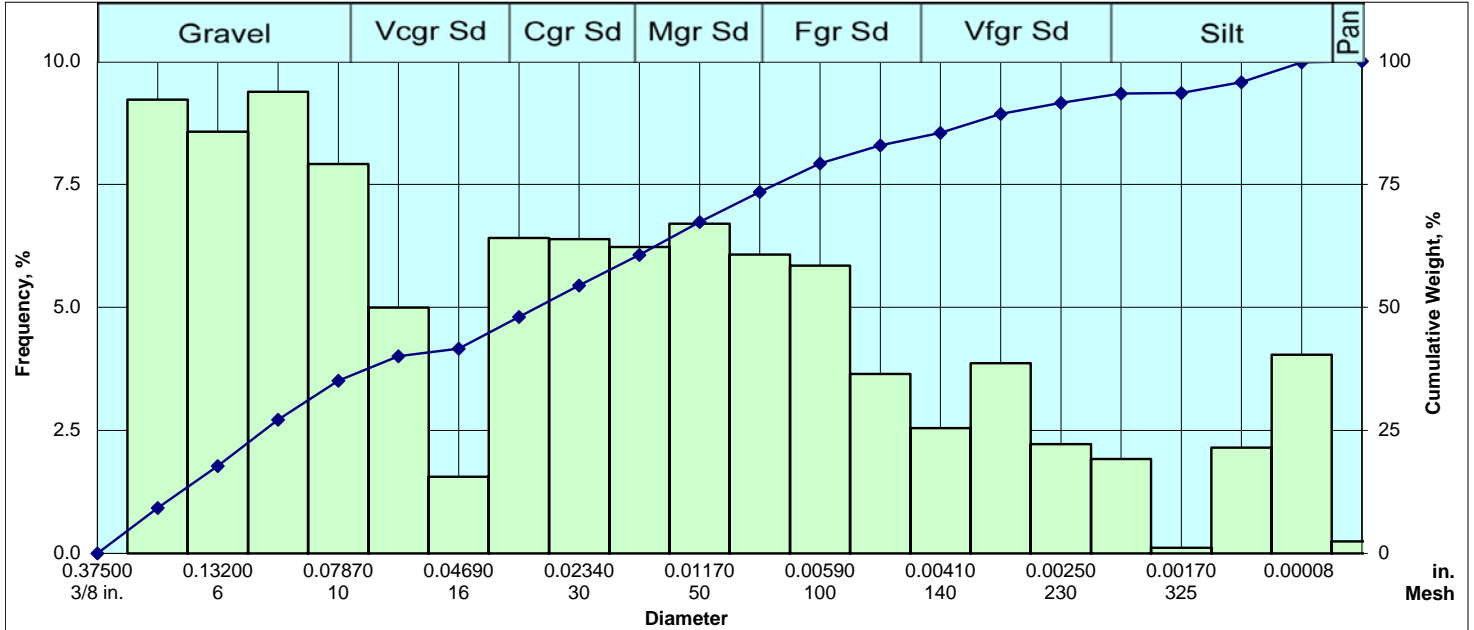
| | | | | | | |
|------------------|---------|---------|--------|-------|--------|---------|
| Gravel | 3/8 in. | 0.37500 | 9.5000 | -3.25 | 0.000 | 0.000 |
| | 4 | 0.18700 | 4.7500 | -2.25 | 8.603 | 8.603 |
| | 6 | 0.13200 | 3.3500 | -1.75 | 11.888 | 20.492 |
| | 8 | 0.09370 | 2.3600 | -1.25 | 13.015 | 33.506 |
| Very Coarse Sand | 10 | 0.07870 | 2.0000 | -1.00 | 8.948 | 42.454 |
| | 14 | 0.05550 | 1.4100 | -0.50 | 5.115 | 47.569 |
| Coarse Sand | 16 | 0.04690 | 1.1800 | -0.25 | 2.418 | 49.987 |
| | 20 | 0.03310 | 0.8500 | 0.25 | 6.507 | 56.495 |
| Medium Sand | 30 | 0.02340 | 0.6000 | 0.75 | 5.559 | 62.054 |
| | 40 | 0.01650 | 0.4250 | 1.25 | 5.078 | 67.132 |
| Fine Sand | 50 | 0.01170 | 0.3000 | 1.75 | 5.347 | 72.478 |
| | 70 | 0.00830 | 0.2120 | 2.25 | 4.812 | 77.290 |
| | 100 | 0.00590 | 0.1500 | 2.75 | 4.646 | 81.936 |
| Very Fine Sand | 120 | 0.00490 | 0.1250 | 3.00 | 2.910 | 84.845 |
| | 140 | 0.00410 | 0.1060 | 3.25 | 2.030 | 86.876 |
| | 200 | 0.00290 | 0.0750 | 3.75 | 3.213 | 90.089 |
| Silt | 230 | 0.00250 | 0.0630 | 4.00 | 1.555 | 91.644 |
| | 270 | 0.00210 | 0.0530 | 4.25 | 2.099 | 93.743 |
| | 325 | 0.00170 | 0.0450 | 4.50 | 0.056 | 93.799 |
| Clay | 400 | 0.00150 | 0.0380 | 4.75 | 2.074 | 95.873 |
| | Pan | 0.00002 | 0.0005 | 11.00 | 0.350 | 100.000 |

| Sorting Statistics (Folk) | | | |
|---------------------------|-------|-------|------|
| Parameter | Trask | Inman | Folk |

| | | | |
|------------|----------------------|--------|---------|
| Median | Medium sand sized | | |
| (in) | 0.0464 | 0.0464 | 0.0464 |
| (mm) | 1.1794 | 1.1794 | 1.1794 |
| Mean | Medium sand sized | | |
| (in) | 0.0642 | 0.0282 | 0.0333 |
| (mm) | 1.6305 | 0.7163 | 0.8458 |
| Sorting | Very poor | | |
| | 3.442 | 2.437 | 2.334 |
| Skewness | Strongly fine skewed | | |
| | 0.741 | 0.295 | 0.306 |
| Kurtosis | Platykurtic | | |
| | 0.305 | 0.511 | 0.846 |
| Percentile | [in.] | [mm] | [phi] |
| 5 | 0.2653 | 6.7395 | -2.7526 |
| 10 | 0.1805 | 4.5855 | -2.1971 |
| 16 | 0.1527 | 3.8790 | -1.9557 |
| 25 | 0.1184 | 3.0071 | -1.5884 |
| 50 | 0.0464 | 1.1794 | -0.2380 |
| 75 | 0.0100 | 0.2539 | 1.9778 |
| 84 | 0.0052 | 0.1323 | 2.9185 |
| 90 | 0.0030 | 0.0759 | 3.7206 |
| 95 | 0.0016 | 0.0409 | 4.6101 |



Mechanical Sieve Particle Size Analysis



| Particle Size Distribution | | | | | | |
|----------------------------|-----------|-------|------|-----|----------|--------|
| | Diameter | | | | Weight % | |
| | [US Mesh] | [in.] | [mm] | [φ] | [Incl.] | [Cum.] |

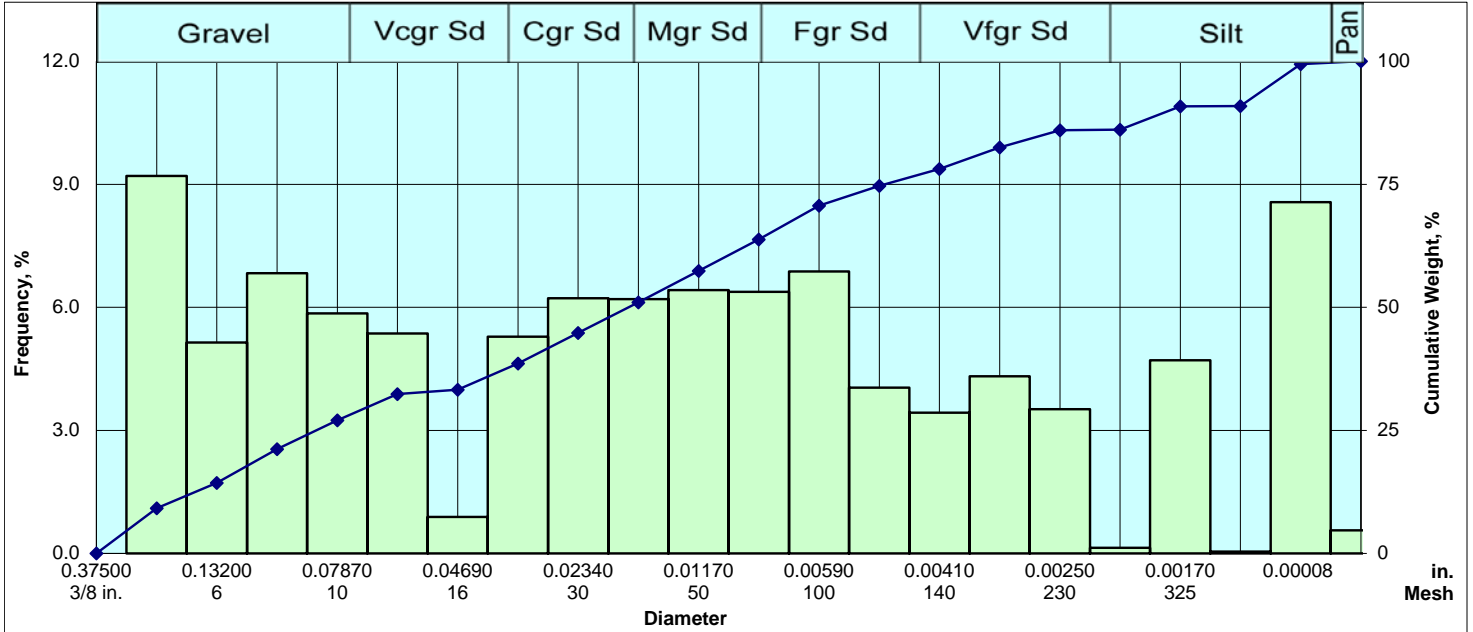
| | | | | | | |
|------------------|---------|---------|--------|-------|-------|---------|
| Gravel | 3/8 in. | 0.37500 | 9.5000 | -3.25 | 0.000 | 0.000 |
| | 4 | 0.18700 | 4.7500 | -2.25 | 9.222 | 9.222 |
| | 6 | 0.13200 | 3.3500 | -1.75 | 8.566 | 17.788 |
| | 8 | 0.09370 | 2.3600 | -1.25 | 9.376 | 27.165 |
| Very Coarse Sand | 10 | 0.07870 | 2.0000 | -1.00 | 7.910 | 35.075 |
| | 14 | 0.05550 | 1.4100 | -0.50 | 4.993 | 40.068 |
| Coarse Sand | 16 | 0.04690 | 1.1800 | -0.25 | 1.555 | 41.623 |
| | 20 | 0.03310 | 0.8500 | 0.25 | 6.409 | 48.032 |
| Medium Sand | 30 | 0.02340 | 0.6000 | 0.75 | 6.386 | 54.418 |
| | 40 | 0.01650 | 0.4250 | 1.25 | 6.224 | 60.642 |
| Fine Sand | 50 | 0.01170 | 0.3000 | 1.75 | 6.699 | 67.341 |
| | 70 | 0.00830 | 0.2120 | 2.25 | 6.073 | 73.414 |
| | 100 | 0.00590 | 0.1500 | 2.75 | 5.846 | 79.260 |
| Very Fine Sand | 120 | 0.00490 | 0.1250 | 3.00 | 3.646 | 82.906 |
| | 140 | 0.00410 | 0.1060 | 3.25 | 2.543 | 85.449 |
| | 200 | 0.00290 | 0.0750 | 3.75 | 3.866 | 89.315 |
| Silt | 230 | 0.00250 | 0.0630 | 4.00 | 2.223 | 91.538 |
| | 270 | 0.00210 | 0.0530 | 4.25 | 1.918 | 93.456 |
| | 325 | 0.00170 | 0.0450 | 4.50 | 0.112 | 93.568 |
| Clay | 400 | 0.00150 | 0.0380 | 4.75 | 2.149 | 95.717 |
| | Pan | 0.00002 | 0.0005 | 11.00 | 0.245 | 100.000 |

| Sorting Statistics (Folk) | | | |
|---------------------------|-------|-------|------|
| Parameter | Trask | Inman | Folk |

| | | | |
|-------------------|--------------------------|-------------|--------------|
| Median | Medium sand sized | | |
| (in) | 0.0425 | 0.0425 | 0.0425 |
| (mm) | 1.0783 | 1.0783 | 1.0783 |
| Mean | Medium sand sized | | |
| (in) | 0.0777 | 0.0352 | 0.0375 |
| (mm) | 1.9747 | 0.8941 | 0.9517 |
| Sorting | Very poor | | |
| | 3.647 | 2.683 | 2.557 |
| Skewness | Finely skewed | | |
| | 0.934 | 0.101 | 0.111 |
| Kurtosis | Platykurtic | | |
| | 0.189 | 0.496 | 0.881 |
| Percentile | [in.] | [mm] | [phi] |
| 5 | 0.4889 | 12.4186 | -3.6344 |
| 10 | 0.3570 | 9.0686 | -3.1809 |
| 16 | 0.2260 | 5.7416 | -2.5215 |
| 25 | 0.1446 | 3.6732 | -1.8770 |
| 50 | 0.0425 | 1.0783 | -0.1088 |
| 75 | 0.0109 | 0.2761 | 1.8566 |
| 84 | 0.0055 | 0.1392 | 2.8443 |
| 90 | 0.0038 | 0.0965 | 3.3740 |
| 95 | 0.0019 | 0.0477 | 4.3908 |



Mechanical Sieve Particle Size Analysis



| Particle Size Distribution | | | | | | |
|----------------------------|-----------|-------|------|-----|----------|--------|
| | Diameter | | | | Weight % | |
| | [US Mesh] | [in.] | [mm] | [φ] | [Incl.] | [Cum.] |

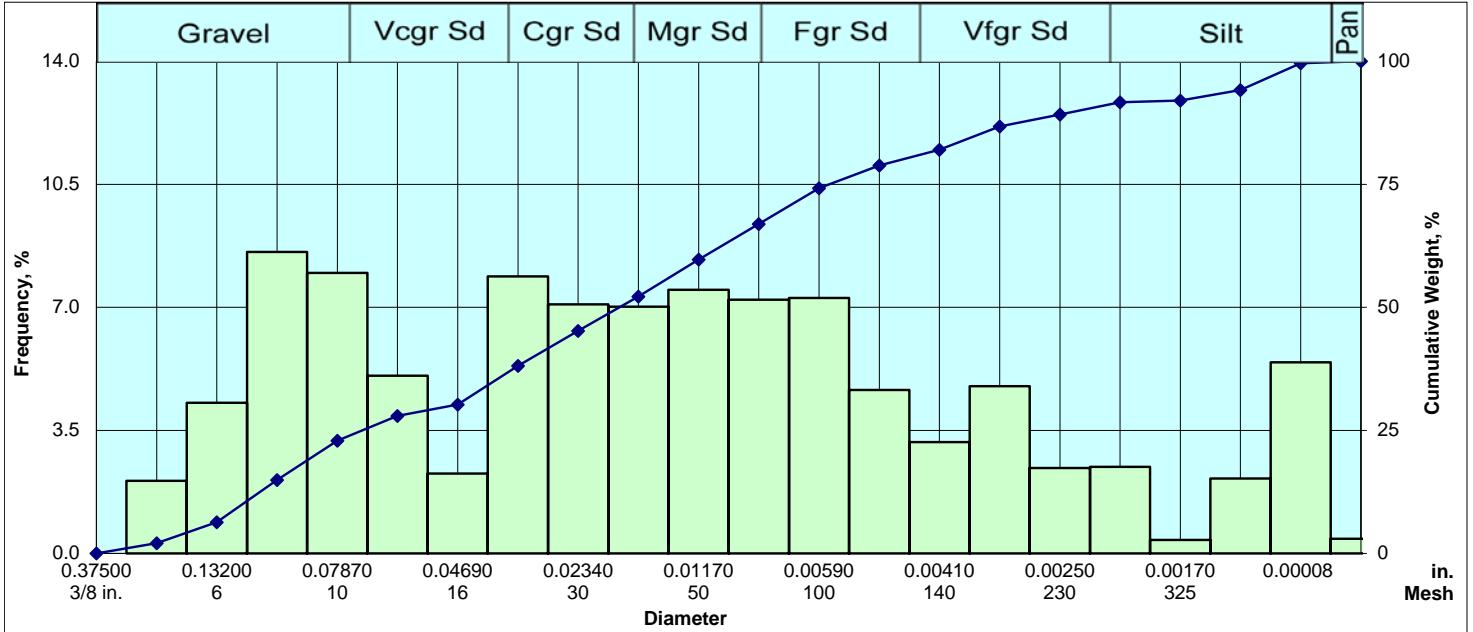
| | | | | | | |
|------------------|---------|---------|--------|-------|-------|---------|
| Gravel | 3/8 in. | 0.37500 | 9.5000 | -3.25 | 0.000 | 0.000 |
| | 4 | 0.18700 | 4.7500 | -2.25 | 9.204 | 9.204 |
| | 6 | 0.13200 | 3.3500 | -1.75 | 5.144 | 14.348 |
| | 8 | 0.09370 | 2.3600 | -1.25 | 6.834 | 21.182 |
| Very Coarse Sand | 10 | 0.07870 | 2.0000 | -1.00 | 5.850 | 27.032 |
| | 14 | 0.05550 | 1.4100 | -0.50 | 5.361 | 32.394 |
| Coarse Sand | 16 | 0.04690 | 1.1800 | -0.25 | 0.888 | 33.281 |
| | 20 | 0.03310 | 0.8500 | 0.25 | 5.283 | 38.564 |
| Medium Sand | 30 | 0.02340 | 0.6000 | 0.75 | 6.224 | 44.788 |
| | 40 | 0.01650 | 0.4250 | 1.25 | 6.201 | 50.989 |
| Fine Sand | 50 | 0.01170 | 0.3000 | 1.75 | 6.420 | 57.409 |
| | 70 | 0.00830 | 0.2120 | 2.25 | 6.380 | 63.789 |
| | 100 | 0.00590 | 0.1500 | 2.75 | 6.877 | 70.665 |
| Very Fine Sand | 120 | 0.00490 | 0.1250 | 3.00 | 4.045 | 74.710 |
| | 140 | 0.00410 | 0.1060 | 3.25 | 3.429 | 78.139 |
| | 200 | 0.00290 | 0.0750 | 3.75 | 4.322 | 82.462 |
| Silt | 230 | 0.00250 | 0.0630 | 4.00 | 3.518 | 85.979 |
| | 270 | 0.00210 | 0.0530 | 4.25 | 0.139 | 86.118 |
| | 325 | 0.00170 | 0.0450 | 4.50 | 4.711 | 90.829 |
| Clay | 400 | 0.00150 | 0.0380 | 4.75 | 0.043 | 90.871 |
| | Pan | 0.00002 | 0.0005 | 11.00 | 8.563 | 99.434 |
| | | | | | 0.566 | 100.000 |

| Sorting Statistics (Folk) | | | |
|---------------------------|-------|-------|------|
| Parameter | Trask | Inman | Folk |

| | | | |
|------------|-------------------|---------|---------|
| Median | Medium sand sized | | |
| (in) | 0.0252 | 0.0252 | 0.0252 |
| (mm) | 0.6399 | 0.6399 | 0.6399 |
| Mean | Medium sand sized | | |
| (in) | 0.0561 | 0.0251 | 0.0252 |
| (mm) | 1.4259 | 0.6386 | 0.6390 |
| Sorting | Very poor | | |
| | 4.276 | 2.788 | 2.640 |
| Skewness | Near symmetrical | | |
| | 0.988 | 0.001 | -0.020 |
| Kurtosis | Platykurtic | | |
| | 0.147 | 0.474 | 0.804 |
| Percentile | [in.] | [mm] | [phi] |
| 5 | 0.4887 | 12.4119 | -3.6337 |
| 10 | 0.3451 | 8.7651 | -3.1318 |
| 16 | 0.1737 | 4.4116 | -2.1413 |
| 25 | 0.1065 | 2.7039 | -1.4351 |
| 50 | 0.0252 | 0.6399 | 0.6442 |
| 75 | 0.0058 | 0.1479 | 2.7574 |
| 84 | 0.0036 | 0.0924 | 3.4353 |
| 90 | 0.0022 | 0.0548 | 4.1908 |
| 95 | 0.0016 | 0.0416 | 4.5864 |



Mechanical Sieve Particle Size Analysis



| Particle Size Distribution | | | | | | |
|----------------------------|-----------|-------|------|-----|----------|--------|
| | Diameter | | | | Weight % | |
| | [US Mesh] | [in.] | [mm] | [φ] | [Incl.] | [Cum.] |

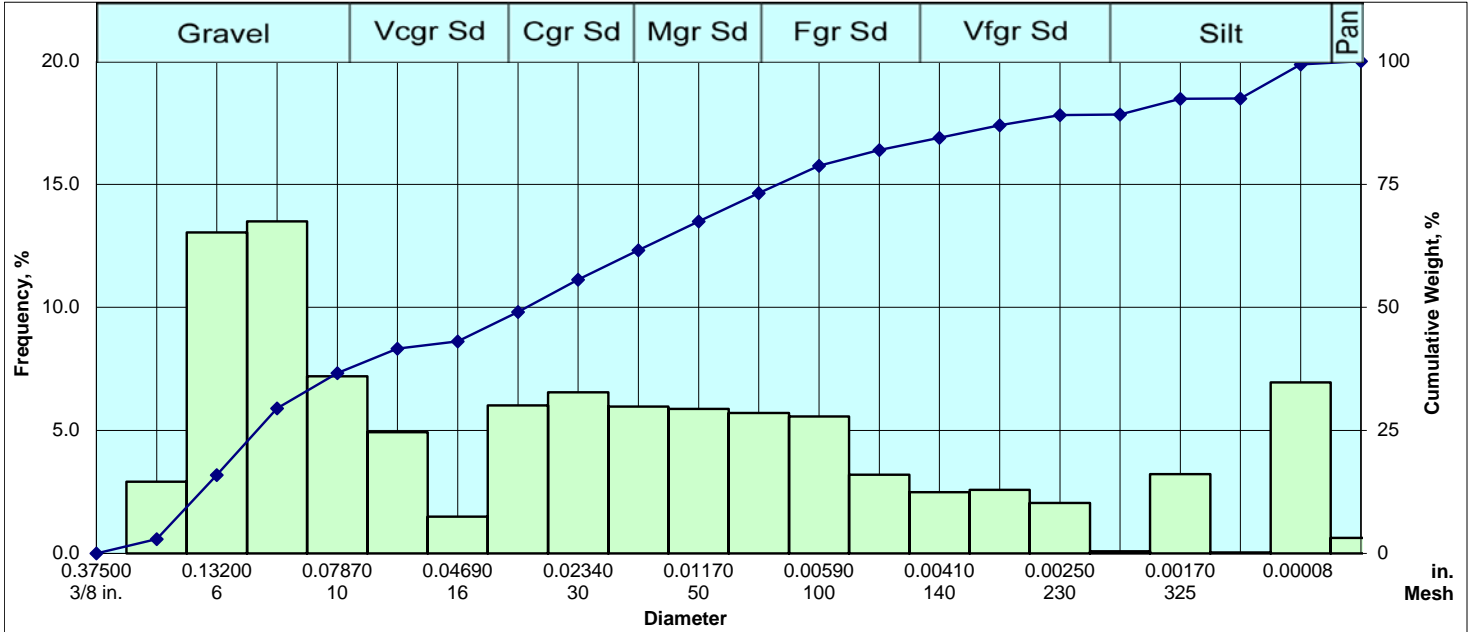
| | | | | | | |
|------------------|---------|---------|--------|-------|-------|---------|
| Gravel | 3/8 in. | 0.37500 | 9.5000 | -3.25 | 0.000 | 0.000 |
| | 4 | 0.18700 | 4.7500 | -2.25 | 2.063 | 2.063 |
| | 6 | 0.13200 | 3.3500 | -1.75 | 4.288 | 6.351 |
| | 8 | 0.09370 | 2.3600 | -1.25 | 8.576 | 14.927 |
| Very Coarse Sand | 10 | 0.07870 | 2.0000 | -1.00 | 7.979 | 22.906 |
| | 14 | 0.05550 | 1.4100 | -0.50 | 5.059 | 27.965 |
| Coarse Sand | 16 | 0.04690 | 1.1800 | -0.25 | 2.269 | 30.234 |
| | 20 | 0.03310 | 0.8500 | 0.25 | 7.876 | 38.110 |
| Medium Sand | 30 | 0.02340 | 0.6000 | 0.75 | 7.084 | 45.194 |
| | 40 | 0.01650 | 0.4250 | 1.25 | 7.018 | 52.212 |
| Fine Sand | 50 | 0.01170 | 0.3000 | 1.75 | 7.496 | 59.708 |
| | 70 | 0.00830 | 0.2120 | 2.25 | 7.214 | 66.922 |
| | 100 | 0.00590 | 0.1500 | 2.75 | 7.263 | 74.184 |
| Very Fine Sand | 120 | 0.00490 | 0.1250 | 3.00 | 4.652 | 78.836 |
| | 140 | 0.00410 | 0.1060 | 3.25 | 3.165 | 82.001 |
| | 200 | 0.00290 | 0.0750 | 3.75 | 4.755 | 86.756 |
| Silt | 230 | 0.00250 | 0.0630 | 4.00 | 2.426 | 89.182 |
| | 270 | 0.00210 | 0.0530 | 4.25 | 2.459 | 91.641 |
| | 325 | 0.00170 | 0.0450 | 4.50 | 0.380 | 92.021 |
| Clay | 400 | 0.00150 | 0.0380 | 4.75 | 2.128 | 94.149 |
| | Pan | 0.00002 | 0.0005 | 11.00 | 0.416 | 100.000 |

| Sorting Statistics (Folk) | | | |
|---------------------------|-------|-------|------|
| Parameter | Trask | Inman | Folk |

| | | | |
|------------|-------------------|--------|---------|
| Median | Medium sand sized | | |
| (in) | 0.0267 | 0.0267 | 0.0267 |
| (mm) | 0.6788 | 0.6788 | 0.6788 |
| Mean | Medium sand sized | | |
| (in) | 0.0475 | 0.0242 | 0.0250 |
| (mm) | 1.2061 | 0.6135 | 0.6345 |
| Sorting | Very poor | | |
| | 3.316 | 2.390 | 2.279 |
| Skewness | Near symmetrical | | |
| | 0.982 | 0.061 | 0.083 |
| Kurtosis | Platykurtic | | |
| | 0.246 | 0.496 | 0.848 |
| Percentile | [in.] | [mm] | [phi] |
| 5 | 0.2459 | 6.2463 | -2.6430 |
| 10 | 0.1636 | 4.1543 | -2.0546 |
| 16 | 0.1266 | 3.2169 | -1.6857 |
| 25 | 0.0870 | 2.2110 | -1.1447 |
| 50 | 0.0267 | 0.6788 | 0.5590 |
| 75 | 0.0079 | 0.2011 | 2.3138 |
| 84 | 0.0046 | 0.1170 | 3.0953 |
| 90 | 0.0028 | 0.0710 | 3.8159 |
| 95 | 0.0017 | 0.0439 | 4.5095 |



Mechanical Sieve Particle Size Analysis



| Particle Size Distribution | | | | | | |
|----------------------------|-----------|-------|------|-----|----------|--------|
| | Diameter | | | | Weight % | |
| | [US Mesh] | [in.] | [mm] | [φ] | [Incl.] | [Cum.] |

| | | | | | | |
|------------------|---------|---------|--------|-------|--------|---------|
| Gravel | 3/8 in. | 0.37500 | 9.5000 | -3.25 | 0.000 | 0.000 |
| | 4 | 0.18700 | 4.7500 | -2.25 | 2.920 | 2.920 |
| | 6 | 0.13200 | 3.3500 | -1.75 | 13.039 | 15.959 |
| | 8 | 0.09370 | 2.3600 | -1.25 | 13.492 | 29.452 |
| Very Coarse Sand | 10 | 0.07870 | 2.0000 | -1.00 | 7.199 | 36.651 |
| | 14 | 0.05550 | 1.4100 | -0.50 | 4.929 | 41.580 |
| Coarse Sand | 16 | 0.04690 | 1.1800 | -0.25 | 1.495 | 43.075 |
| | 20 | 0.03310 | 0.8500 | 0.25 | 6.011 | 49.086 |
| Medium Sand | 30 | 0.02340 | 0.6000 | 0.75 | 6.550 | 55.636 |
| | 40 | 0.01650 | 0.4250 | 1.25 | 5.971 | 61.607 |
| Fine Sand | 50 | 0.01170 | 0.3000 | 1.75 | 5.875 | 67.482 |
| | 70 | 0.00830 | 0.2120 | 2.25 | 5.704 | 73.186 |
| | 100 | 0.00590 | 0.1500 | 2.75 | 5.563 | 78.749 |
| Very Fine Sand | 120 | 0.00490 | 0.1250 | 3.00 | 3.197 | 81.946 |
| | 140 | 0.00410 | 0.1060 | 3.25 | 2.492 | 84.438 |
| | 200 | 0.00290 | 0.0750 | 3.75 | 2.578 | 87.016 |
| Silt | 230 | 0.00250 | 0.0630 | 4.00 | 2.054 | 89.070 |
| | 270 | 0.00210 | 0.0530 | 4.25 | 0.091 | 89.161 |
| | 325 | 0.00170 | 0.0450 | 4.50 | 3.222 | 92.383 |
| Clay | 400 | 0.00150 | 0.0380 | 4.75 | 0.035 | 92.418 |
| | Pan | 0.00002 | 0.0005 | 11.00 | 6.955 | 99.373 |
| | | | | | 0.627 | 100.000 |

| Sorting Statistics (Folk) | | | |
|---------------------------|-------|-------|------|
| Parameter | Trask | Inman | Folk |

| | | | |
|-------------------|--------------------------|-------------|--------------|
| Median | Medium sand sized | | |
| (in) | 0.0446 | 0.0446 | 0.0446 |
| (mm) | 1.1340 | 1.1340 | 1.1340 |
| Mean | Medium sand sized | | |
| (in) | 0.0804 | 0.0309 | 0.0349 |
| (mm) | 2.0416 | 0.7836 | 0.8864 |
| Sorting | Very poor | | |
| | 3.748 | 2.598 | 2.464 |
| Skewness | Finely skewed | | |
| | 0.897 | 0.205 | 0.219 |
| Kurtosis | Platykurtic | | |
| | 0.258 | 0.479 | 0.826 |
| Percentile | [in.] | [mm] | [phi] |
| 5 | 0.3442 | 8.7423 | -3.1280 |
| 10 | 0.2725 | 6.9209 | -2.7910 |
| 16 | 0.1868 | 4.7458 | -2.2466 |
| 25 | 0.1501 | 3.8119 | -1.9305 |
| 50 | 0.0446 | 1.1340 | -0.1814 |
| 75 | 0.0107 | 0.2713 | 1.8820 |
| 84 | 0.0051 | 0.1294 | 2.9501 |
| 90 | 0.0024 | 0.0604 | 4.0494 |
| 95 | 0.0017 | 0.0424 | 4.5597 |

To: Larry Kunkel, Core Laboratories
 3470 Landco Drive, Bakersfield, CA 93308

NERT Project Work Order No. CL-2019-003
 Nevada Environmental Reponse Trust (NERT)
 Henderson, Nevada

Ramboll Project No.: 169001 1200-028 (Task M03)

PHYSICAL TESTING REQUEST
 for Soil Gas Probe Borings (sent 3/5/19 and 3/20/19)

Date: April 30, 2019
 Submitted by: Ramboll, 2200 Powell Street, Suite 700
 Emeryville, CA 94608

Ramboll Contact: Ross Russell, (510) 420-2520

| Boring | Soil Sample Depth (ft bgs) | Soil Sample Name | Container type (number) | Grain Size (+ USCS class.) (Note 3) | Atterberg Limits | Moisture Content | Dry Bulk Density | Total Porosity | HYDRAULIC CONDUCTIVITY | | | Total Organic Carbon | |
|----------------|----------------------------|------------------|------------------------------|-------------------------------------|------------------|------------------|------------------|----------------|------------------------|--|--|----------------------|-----------|
| | | | | | | | | | Vertical (to water) | Height of Unsaturated Soil Above Water Table | Height of Saturated Soil Below Water Table | | |
| ✓1 | RISG-1 | 4.6 - 5.0 | PT-RISG1-4.6-5.0-20190226 | Plastic liner | X | X (1) | X | X | X | -- | -- | -- | X |
| ✓2 | RISG-1 | 9.6 - 10.0 | PT-RISG1-9.6-10.0-20190226 | Plastic liner | X | X (1) | X | X | X | -- | -- | -- | X |
| ✓3 | RISG-1 | 14.6 - 15.0 | PT-RISG1-14.6-15.0- 20190226 | Plastic liner | X | X (1) | X | X | X | -- | -- | -- | X |
| ✓4 | RISG-2 | 4.6 - 5.0 | PT-RISG2-4.6-5.0-20190226 | Plastic liner | X | X (1) | X | X | X | -- | -- | -- | X |
| ✓5 | RISG-2 | 9.6 - 10.0 | PT-RISG2-9.6-10.0-20190226 | Plastic liner | X | X (1) | X | X | X | -- | -- | -- | X |
| ✓6 | RISG-2 | 14.6 - 15.0 | PT-RISG2-14.6-15.0-20190226 | Plastic liner | X | X (1) | X | X | X | -- | -- | -- | X |
| 7 | RISG-3 | 4.6 - 5.0 | PT-RISG3-4.6-5.0-20190226 | Plastic liner | X | X (1) | X | X | X | -- | -- | -- | X |
| * 8 | RISG-3 | 9.6 - 10.0 | PT-RISG3-9.6-10.0-20190226 | Plastic liner | X | X (1) | X | X | X | -- | -- | -- | X |
| 9 | RISG-3 | 14.6 - 15.0 | PT-RISG3-14.6-15.0- 20190226 | Plastic liner | X | X (1) | X | X | X | -- | -- | -- | X |
| 10 | RISG-4 | 4.6 - 5.0 | PT-RISG4-4.6-5.0-20190226 | Plastic liner | X | X (1) | X | X | X | -- | -- | -- | X |
| 11 | RISG-4 | 9.6 - 10.0 | PT-RISG4-9.6-10.0-20190226 | Plastic liner | X | X (1) | X | X | X | -- | -- | -- | X |
| 12 | RISG-4 | 14.6 - 15.0 | PT-RISG4-14.6-15.0-20190226 | Plastic liner | X | X (1) | X | X | X | -- | -- | -- | X |
| 13 | RISG-5 | 4.6 - 5.0 | PT-RISG5-4.6-5.0-20190226 | Glass jar | X | -- | -- | -- | -- | -- | -- | -- | X |
| 14 | RISG-5 | 9.6 - 10.0 | PT-RISG5-9.6-10.0-20190226 | Plastic liner | X | X (1) | X | X | X | -- | -- | -- | X |
| 15 | RISG-5 | 14.6 - 15.0 | PT-RISG5-14.6-15.0-20190226 | Plastic liner | X | X (1) | X | X | X | -- | -- | -- | X |
| 16 | RISG-6 | 12.0 - 12.5 | PT-RISG6-12.0-12.5 | Plastic liner | X | X (1) | X | X | X | -- | -- | -- | X |
| 17 | RISG-6 | 14.5 - 15.0 | PT-RISG6-14.5-15.0 | Plastic liner | X | X (1) | X | X | X | -- | -- | -- | X |
| 18 | RISG-6 | 4.7 - 5.0 | PT-RISG6-4.7-5.0 | Glass jar | X | -- | -- | -- | -- | -- | -- | -- | X |
| 19 | RISG-7 | 4.6 - 5.0 | PT-RISG7-4.6-5.0-20190226 | Plastic liner | X | X (1) | X | X | X | -- | -- | -- | X |
| 20 | RISG-7 | 9.6 - 10.0 | PT-RISG7-9.6-10.0-20190226 | Plastic liner | X | X (1) | X | X | X | -- | -- | -- | X |
| 21 | RISG-8 | 4.5 - 5.0 | PT-RISG8-4.5-5.0 | Plastic liner | X | X (1) | X | X | X | -- | -- | -- | X |
| 22 | RISG-8 | 5.0 - 10.0 | PT-RISG8-5.0-10.0 | Plastic liner | X | X (1) | X | X | X | -- | -- | -- | X |
| 23 | RISG-8 | 10.0 - 15.0 | PT-RISG8-10.0-15.0 | Plastic liner | X | X (1) | X | X | X | -- | -- | -- | X |
| 24 | RISG-9 | 4.6 - 5.0 | PT-RISG9-4.6-5.0-20190222 | Plastic liner | X | X (1) | X | X | X | -- | -- | -- | X |
| 25 | RISG-9 | 9.6 - 10.0 | PT-RISG9-9.6-10.0-20190222 | Plastic liner | X | X (1) | X | X | X | -- | -- | -- | X |
| TOTALS: | | | | 25 | 23 | 23 | 23 | 23 | 23 | | | | 25 |

Notes:

- (1) If necessary for classification of fines.
- (2) SOIL SAMPLES ARE LIKELY CONTAMINATED (perchlorate, metals, VOCs).
- (3) Please include both the USCS and Wentworth grain size summaries in the lab report.

Baseline Health Risk Assessment
for OU-2 Soil Gas and Groundwater
Nevada Environmental Response Trust
Henderson, Nevada

APPENDIX G
RISK ASSESSMENT CALCULATION SPREADSHEETS AND
SUPPORTING DOCUMENTATION (PROVIDED ELECTRONICALLY)

Baseline Health Risk Assessment
for OU-2 Soil Gas and Groundwater
Nevada Environmental Response Trust
Henderson, Nevada

APPENDIX H
UCL INPUT AND OUTPUT FILES FOR OUTDOOR AIR EXPOSURE
POINT CONCENTRATIONS (PROVIDED ELECTRONICALLY)

Baseline Health Risk Assessment
for OU-2 Soil Gas and Groundwater
Nevada Environmental Response Trust
Henderson, Nevada

APPENDIX I
SUPPORTING DOCUMENTS FOR SEMI-QUANTITATIVE EVALUATION
OF DIRECT CONTACT WITH SHALLOW GROUNDWATER FOR THE
CONSTRUCTION WORKER

**TABLE I-1. Screening of Groundwater Results at PC-161 and PC-162
Nevada Environmental Response Trust Site
Henderson, Nevada**

| Chemical Group | Chemical Name | Minimum Detect | Average Detect | Maximum Detect | Construction Worker Groundwater Screening Levels (CWGWSL) ^[1] | | Unit | Ratio of Maximum Detect to CWGWSL |
|-------------------|---------------------------------|----------------|----------------|----------------|--|--------|------|-----------------------------------|
| | | | | | Level | Source | | |
| General Chemistry | Bicarbonate as HCO ₃ | 200 | 252 | 290 | -- | -- | mg/L | -- |
| General Chemistry | Bromide | 10 | 10 | 10 | 9.0E+04 | BCL | mg/L | 1.1E-04 |
| General Chemistry | Chlorate | 0.039 | 1.5 | 2.4 | 8.0E+03 | BCL | mg/L | 3.0E-04 |
| General Chemistry | Chloride | 1100 | 2350 | 3700 | -- | -- | mg/L | -- |
| General Chemistry | Nitrate (as N) | 15 | 17 | 19 | 8.0E+04 | MCL | mg/L | 2.4E-04 |
| General Chemistry | Nitrate Nitrite as N | 3.4 | 3.7 | 4.3 | 8.0E+04 | MCL | mg/L | 5.4E-05 |
| General Chemistry | Perchlorate | 0.0087 | 25 | 35 | 1.9E+02 | BCL | mg/L | 1.9E-01 |
| General Chemistry | Phosphorus (total) | 0.028 | 0.096 | 0.14 | 1.3E+07 | BCL | mg/L | 1.1E-08 |
| General Chemistry | Sulfate | 1200 | 1533 | 1900 | -- | -- | mg/L | -- |
| Metals | Arsenic | 0.031 | 0.10 | 0.16 | 8.0E+01 | MCL | mg/L | 2.0E-03 |
| Metals | Boron | 1.6 | 2.1 | 2.6 | 5.3E+04 | BCL | mg/L | 4.9E-05 |
| Metals | Calcium | 210 | 281 | 350 | -- | -- | mg/L | -- |
| Metals | Iron | 0.12 | 0.12 | 0.12 | 1.9E+05 | BCL | mg/L | 6.4E-07 |
| Metals | Magnesium | 98 | 157 | 220 | 1.5E+06 | BCL | mg/L | 1.5E-04 |
| Metals | Manganese | 0.72 | 1.5 | 2.3 | 6.4E+03 | BCL | mg/L | 3.6E-04 |
| Metals | Potassium | 23 | 32 | 43 | -- | -- | mg/L | -- |
| Metals | Sodium | 690 | 1424 | 2200 | -- | -- | mg/L | -- |
| Metals | Strontium | 5.4 | 8.4 | 11 | 1.6E+05 | BCL | mg/L | 6.9E-05 |
| Metals | Vanadium | 0.013 | 0.05 | 0.079 | 1.3E+03 | BCL | mg/L | 5.9E-05 |
| VOCs | Chlorobenzene | 6.2 | 6.3 | 6.4 | 8.0E+05 | MCL | µg/L | 8.0E-06 |
| VOCs | Chloroform | 0.28 | 0.32 | 0.34 | 5.6E+05 | MCLG | µg/L | 6.1E-07 |
| VOCs | 1,2-Dichlorobenzene | 3.4 | 6.7 | 10 | 4.8E+06 | MCL | µg/L | 2.1E-06 |
| VOCs | 1,3-Dichlorobenzene | 0.25 | 1.2 | 2 | 6.5E+05 | BCL | µg/L | 3.1E-06 |
| VOCs | 1,4-Dichlorobenzene | 5.1 | 8.8 | 13 | 6.0E+05 | MCL | µg/L | 2.2E-05 |
| VOCs | 1,1-Dichloroethane | 0.95 | 1.4 | 2 | 2.2E+04 | BCL | µg/L | 9.3E-05 |
| VOCs | 1,4-Dioxane | 1.4 | 1.6 | 1.9 | 5.4E+03 | BCL | µg/L | 3.5E-04 |
| VOCs | 1,2,3-Trichlorobenzene | 0.59 | 0.88 | 1.3 | 2.1E+05 | BCL | µg/L | 6.1E-06 |
| VOCs | 1,2,4-Trichlorobenzene | 3.7 | 5.7 | 8.6 | 5.6E+05 | MCL | µg/L | 1.5E-05 |
| VOCs | Trichloroethene | 2.4 | 2.5 | 2.6 | 4.0E+04 | MCL | µg/L | 6.5E-05 |
| VOCs | 1,2,3-Trichloropropane | 0.0039 | 0.0044 | 0.0053 | 1.8E+01 | BCL | µg/L | 3.0E-04 |

Notes:

-- = not available or not calculated

CWGWSL = construction worker groundwater screening Level

mg/L = milligram per liter

µg/L = microgram per liter

NDEP = Nevada Division of Environmental Protection

USEPA = United States Environmental Protection Agency

[1]. The construction worker groundwater screening levels were calculated based on the groundwater screening levels from the sources listed below and ratio of intake factors for drinking water pathway and incidental groundwater ingestion pathway shown in Table I-2.

The lower of the ratios of cancer and noncancer intake factors is conservatively used to develop the construction worker groundwater screening levels.

MCL: Maximum Contaminant Level (USEPA 2021a).

MCLG: Maximum Contaminant Level Goal (USEPA 2021a).

BCL: Residential Water Basic Comparison Level (NDEP 2017)

RSL: Regional Screening Levels (RSLs) for tapwater (USEPA 2021b).

Sources:

NDEP. 2017. User's Guide and Background Technical Document for NDEP Basic Comparison Levels (BCLs) for Human Health for the BMI Complex and Common Areas. Revision 14, July.

USEPA. 2021a. National Primary Drinking Water Regulations. Code of Federal Regulations, 40 CFR Part 141. Accessed May 2021.

USEPA. 2021b. Regional Screening Levels (RSL) for Chemical Contaminants at Superfund sites. May.

TABLE I-2. Exposure Assumption Comparison - Drinking Water Pathway vs. Incidental Ingestion of Groundwater Pathway for Construction Worker

Nevada Environmental Response Trust Site
Henderson, Nevada

| Exposure Factors [1] | Units | Symbol | Drinking Water | | Construction Worker (Wet Trench Scenarios) | |
|--|--|-------------------------|----------------|------------|--|------------|
| | | | Value | Source | Value | Source |
| Receptor-Specific Exposure Factors | | | | | | |
| Target Risk | unitless | TR | 1E-06 | -- | 1E-06 | -- |
| Target Hazard Quotient | unitless | THQ | 1 | -- | 1 | -- |
| Population-Specific Exposure Assumptions | | | | | | |
| Exposure Frequency | days/year | EF | 350 | | 5 | [1] |
| Exposure Duration | years | ED | 70 | USEPA 2018 | 1 | USEPA 2021 |
| Body Weight | kg _{BW} | BW | 70 | USEPA 2018 | 80 | USEPA 2021 |
| Averaging Time for Carcinogens | days | AT _c | 25,550 | USEPA 2021 | 25,550 | USEPA 2021 |
| Averaging Time for Noncarcinogens | days | AT _{nc} | 25,550 | USEPA 2021 | 365 | USEPA 2021 |
| Drinking Water/Groundwater Ingestion | | | | | | |
| Water Ingestion Rate | L _{gw} /day | IR _{gw} | 2.0 | USEPA | 0.020 | VDEQ 2020 |
| Intake Factor for Water Ingestion, cancer | L _{gw} /kg _{BW} /day | IF _{gw.ing_c} | 2.7E-02 | -- | 4.9E-08 | USEPA 1989 |
| Intake Factor for Water, noncancer | L _{gw} /kg _{BW} /day | IF _{gw.ing_nc} | 2.7E-02 | -- | 3.4E-06 | USEPA 1989 |

Ratio of Intake Factors for Drinking Water and Incidental Ingestion of Groundwater, cancer: 560000

Ratio of Intake Factors for Drinking Water and Incidental Ingestion of Groundwater, noncancer: 8000

Notes:

-- = Not applicable

NDEP = Nevada Division of Environmental Protection

RSL = Regional Screening Level

USEPA = United States Environmental Protection Agency

VDEQ = Virginia Department of Environmental Quality

[1] It was assumed that a construction worker would be conducting small-scaled utility or landscaping work for five days in the area near PC-161 and PC-162.

Sources:

Virginia Department of Environmental Quality (VDEQ). 2020. Virginia Unified Risk Assessment Model - VURAM User's Guide. Appendix 3.

USEPA. 1989. Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual (Part A). Interim Final. December.

USEPA. 2021. User's Guide for Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites. May.