APPENDIX J

Figures

PATH: R:\01 Client\18100235\18100235\99_PROJECTS\007\18100235-007-R-F001-Rev0-Regional-Locality-Map-and-mining-lease.mxd PRINTED ON: 2018-10-12 AT: 11:14:55 AM



LEGEND

- Region Locality

Watercourse

- Major
- Minor

Lease Area

- Mineral Exploration Permit
- Mining Lease

Coordinate System:
GDA 1994 MGA Zone 54
Projection: Transverse Mercator
Datum: GDA 1994

0 2 4 6 8 10
Scale: 1:200,000 @ A3 KILOMETRES

NOTE(S)

Gazetter, Lease Area, Mining Lease: © State of Queensland (Department of Natural Resources, Mines and Energy) 2018
Watercourse: © Geoscience Australia.

REFERENCE(S)

Service Layer Credits: Sources: Esri, GEBCO, NOAA, National Geographic, Garmin, HERE, Geonames.org, and other contributors
Esri, Garmin, GEBCO, NOAA NGDC, and other contributors
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Basemap: Pan-sharpened Landsat 8 OLI Image Service, 31/07/2017

TITLE

REGIONAL LOCALITY MAP AND MINING LEASE AREAS

CONSULTANT

GOLDER

YYYY-MM-DD	2018-10-12
DESIGNED	DC
PREPARED	DC
REVIEWED	EC
APPROVED	GW

PROJECT NO.	CONTROL	REV.	FIGURE
18100235	007	0	1

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ISO A3

0 25mm



LEGEND

- Local Features

Watercourse

- Major
- Minor

Coordinate System:
GDA 1994 MGA Zone 54
Projection: Transverse Mercator
Datum: GDA 1994

0 1,000 2,000 3,000 4,000 5,000
1:100,000 @ A3 METRES

REFERENCE(S)

Gazetter: © State of Queensland (Department of Natural Resources, Mines and Energy) 2018
Watercourse: © Geoscience Australia. Data received from Client 04/10/2017.

NOTE(S)

Service Layer Credits: Esri, Garmin, GEBCO, NOAA NGDC, and other contributors
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Basemap: Pan-sharpened Landsat 8 OLI Image Service, 31/07/2017

CONSULTANT

GOLDER

YYYY-MM-DD	2018-10-12
DESIGNED	DC
PREPARED	DC
REVIEWED	EC
APPROVED	GW

TITLE

LOCAL FEATURES

PROJECT NO.	CONTROL	REV.	FIGURE
18100235	007	0	2

PATH: R:\01 Clients\18100235\GIS\0023569_PRO_BC 7SO\7\18100235-007-R-Rev0-Loc of Features.mxd PRINTED ON: 2018-10-12 AT 1:29:51 PM



LEGEND

Watercourse

- Major
- Minor

Investigation

- Preliminary Potential Source Area
- Preliminary Receiving Environment Study Area

Coordinate System:
GDA 1994 MGA Zone 54
Projection: Transverse Mercator
Datum: GDA 1994

0 2.5 5 7.5 10
Scale: 1:200,000 @ A3 KILOMETRES

NOTE(S)

Gazetter: © State of Queensland (Department of Natural Resources, Mines and Energy) 2018

Watercourse: © Geoscience Australia.

REFERENCE(S)

Service Layer Credits: Sources: Esri, GEBCO, NOAA, National Geographic, Garmin, HERE, Geonames.org, and other contributors
Esri, Garmin, GEBCO, NOAA NGDC, and other contributors
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Basemap: Pan-sharpened Landsat 8 OLI Image Service, 31/07/2017

TITLE

PRELIMINARY SOURCE AREA AND RECEIVING ENVIRONMENT

CONSULTANT

GOLDER

YYYY-MM-DD	2018-10-12
DESIGNED	DC
PREPARED	DC
REVIEWED	EC
APPROVED	GW

PROJECT NO.	CONTROL	REV.	FIGURE
18100235	007	0	3

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ISO A3
25mm



LEGEND

Watercourse
- Major
- Minor

Contours
- 5 metre Contours

Elevation

2.5	20.0	37.5	55.0
5.0	22.5	40.0	57.5
7.5	25.0	42.5	60.0
10.0	27.5	45.0	62.5
12.5	30.0	47.5	65.0
15.0	32.5	50.0	
17.5	35.0	52.5	

Coordinate System:
GDA 1994 MGA Zone 54
Projection: Transverse Mercator
Datum: GDA 1994

0 2.5 5 7.5 10
Scale: 1:200,000 @ A3
KILOMETRES

NOTE(S)
Gazetter: © State of Queensland (Department of Natural Resources, Mines and Energy) 2018; **Watercourse:** © Geoscience Australia;**Topographic Contours:** Provided by RTAW

REFERENCE(S)
Service Layer Credits: Sources: Esri, GEBCO, NOAA, National Geographic, Garmin, HERE, Geonames.org, and other contributors
Esri, Garmin, GEBCO, NOAA NGDC, and other contributors
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Basemap: Pan-sharpened Landsat 8 OLI Image Service, 31/07/2017

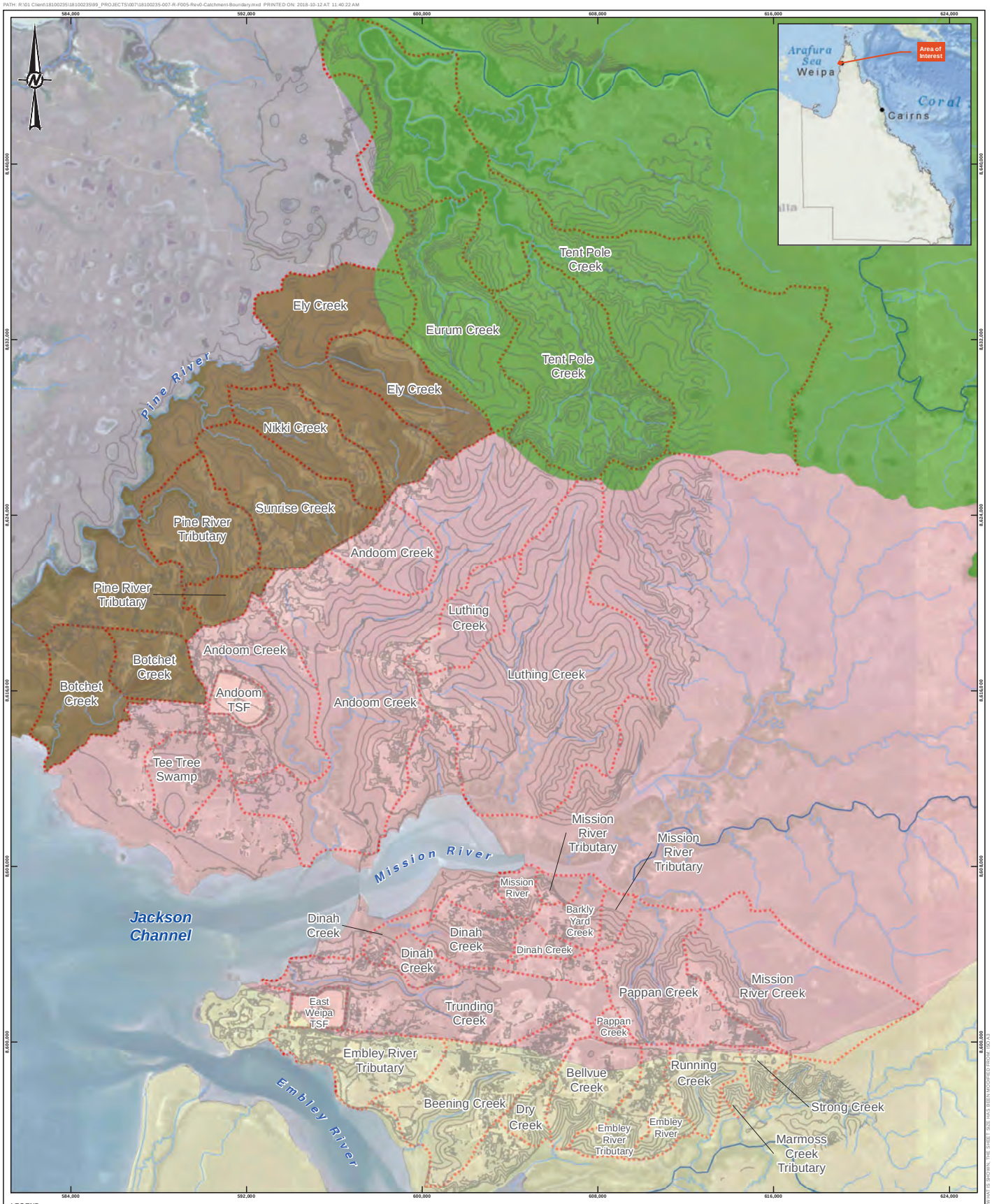
TITLE
REGIONAL TOPOGRAPHY

CONSULTANT
GOLDER

YYYY-MM-DD	2018-10-12
DESIGNED	DC
PREPARED	DC
REVIEWED	EC
APPROVED	GW

PROJECT NO.	CONTROL	REV.	FIGURE
18100235	007	0	4

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ISO A3
0 25mm



LEGEND

Watercourse
- Major
- Minor

Contours
- 5 metre Contours
- Sub-Catchment Boundary

Drainage Catchment
- Embley River
- Mission River
- Wenlock River
- Pine River

Coordinate System:
GDA 1994 MGA Zone 54
Projection: Transverse Mercator
Datum: GDA 1994

0 2 4 6 8
Scale: 1:160,000 @ A3
KILOMETRES

NOTE(S)
Gazetter, Drainage Sub-Basin: © State of Queensland (Department of Natural Resources, Mines and Energy) 2018
Watercourse: © Geoscience Australia; **Topographic Contours:** Provided by RTAW.
Sub-Catchment Boundary Data: Halcrow Weipa and Andoom Hydrogeological/Hydrological Assessment Phase 3 Preliminary report, 23 December 2011. Commissioned by Land and Rehabilitation.

REFERENCE(S)
Service Layer Credits: Sources: Esri, GEBCO, NOAA, National Geographic, Garmin, HERE, Geonames.org, and other contributors
Esri, Garmin, GEBCO, NOAA NGDC, and other contributors
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Basemap: Pan-sharpened Landsat 8 OLI Image Service, 31/07/2017

TITLE
CATCHMENT BOUNDARIES

CONSULTANT
GOLDER

YYYY-MM-DD	2018-10-12
DESIGNED	AFM
PREPARED	DC
REVIEWED	EC
APPROVED	GW

PROJECT NO.	CONTROL	REV.	FIGURE
18100235	007	0	5

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ISO A3
0 25mm



LEGEND

- Region Locality

Watercourse

- Major
- Minor

Coordinate System:
GDA 1994 MGA Zone 54
Projection: Transverse Mercator
Datum: GDA 1994

0 2 4 6 8 10
Scale: 1:200,000 @ A3
KILOMETRES

NOTE(S)

Gazetter, Lease Area, Regional geology 1980 - Carpentaria-Karumba Basins: © State of Queensland (Department of Natural Resources, Mines and Energy) 2018
Watercourse: © Geoscience Australia.

REFERENCE(S)

Service Layer Credits: Sources: Esri, GEBCO, NOAA, National Geographic, Garmin, HERE, Geonames.org, and other contributors
Esri, Garmin, GEBCO, NOAA NGDC, and other contributors
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

TITLE

GEOLOGY

CONSULTANT

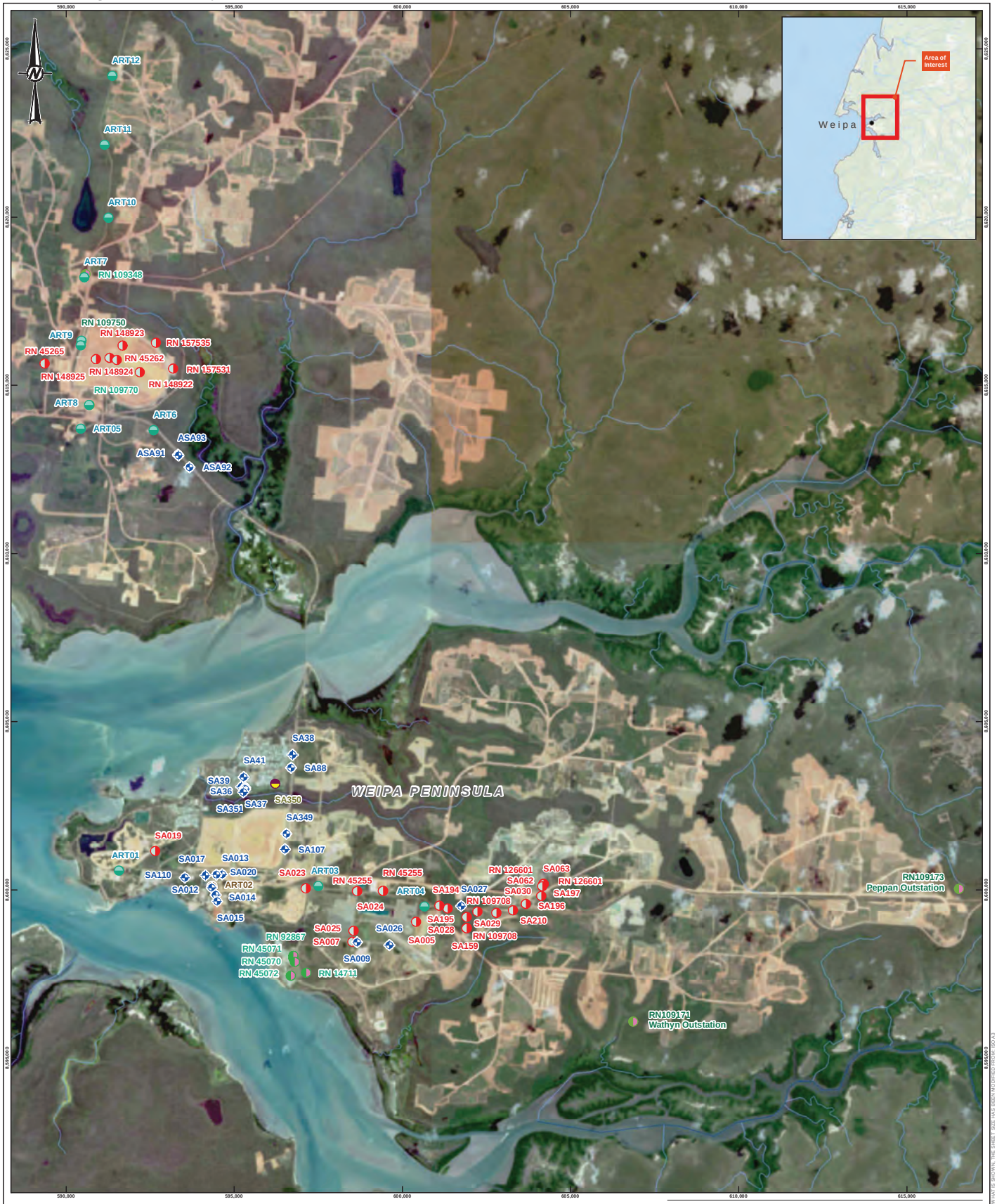
GOLDER

YYYY-MM-DD	2018-10-12
DESIGNED	DC
PREPARED	DC
REVIEWED	EC
APPROVED	GW

PROJECT NO.	CONTROL	REV.	FIGURE
18100235	007	0	6

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ISO A3
0 25mm

PATH: R:\01 Client\18100235\18100235\99_PROJECTS\007\18100235-007-R-F007-Rev0-Registered-GW-abstraction-wells.mxd PRINTED ON: 2018-10-12 AT: 11:47:53 AM



LEGEND

- RTAW abstraction well for irrigation at the Weipa Golf Course, shallow aquifer
- WTA/RTAW potable water supply wells, artesian aquifer
- WTA/RTAW potable water supply wells, shallow aquifer
- RTAW abstraction wells for mining processes, artesian aquifer
- RTAW abstraction wells for mining processes, shallow aquifer
- Third Party well, shallow aquifer

*Queensland Government registered groundwater boreholes are prefixed with RN (eg. **RN 100000**). Other identifications are Queensland Government registered groundwater boreholes with RTAW assigned identifications.*

Coordinate System:
GDA 1994 MGA Zone 54
Projection: Transverse Mercator
Datum: GDA 1994

0 1 2 3 4 5
Scale: 1:105,000 @ A3 KILOMETRES

NOTE(S)
Gazetter: © State of Queensland (Department of Natural Resources, Mines and Energy) 2018
Watercourse: © Geoscience Australia.
Bore Point: Information supplied by RTAW

REFERENCE(S)
Service Layer Credits: Sources: Esri, GEBCO, NOAA, National Geographic, Garmin, HERE, Geonames.org, and other contributors
Esri, Garmin, GEBCO, NOAA NGDC, and other contributors
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Basemap: Pan-sharpened Landsat 8 OLI Image Service, 31/07/2017

TITLE

REGISTERED GROUNDWATER ABSTRACTION WELLS

CONSULTANT

GOLDER

YYYY-MM-DD	2018-10-12
DESIGNED	DC
PREPARED	DC
REVIEWED	EC
APPROVED	GW

PROJECT NO.	CONTROL	REV.	FIGURE
18100235	007	0	7

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ISO A3
25mm
0

PATH: R:\01 Client\18100235\18100235\99_PROJECTS\007\18100235-007-R-F008-Rev0-Landfill-Location.mxd PRINTED ON: 2018-10-12 AT: 1:32:20 PM



LEGEND

- Locality

Landfill Locations

- Current Operating Landfill – Potential Source Area
- Former Landfill Uncontrolled and Unlined – Potential Source Area

Watercourse

- Major
- Minor

Coordinate System:
GDA 1994 MGA Zone 54
Projection: Transverse Mercator
Datum: GDA 1994

0 1 2 3
Scale: 1:75,000 @ A3 KILOMETRES

NOTE(S)
Gazetter: © State of Queensland (Department of Natural Resources, Mines and Energy) 2018
Watercourse: © Geoscience Australia.
Landfill Sites: © Golder 2018

REFERENCE(S)
Service Layer Credits: Sources: Esri, GEBCO, NOAA, National Geographic, Garmin, HERE, Geonames.org, and other contributors
Esri, Garmin, GEBCO, NOAA NGDC, and other contributors
Basemap: Pan-sharpened Landsat 8 OLI Image Service, 31/07/2017

TITLE
LANDFILL LOCATION

CONSULTANT
GOLDER

YYYY-MM-DD	2018-10-12
DESIGNED	DC
PREPARED	DC
REVIEWED	EC
APPROVED	GW

PROJECT NO.	CONTROL	REV.	FIGURE
18100235	007	0	8

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ISO A3
25mm

PATH: R:\01 Client\18100235\18100235\99_PROJECTS\007\18100235-007-R-F009A-Rev0-AFFF-Lorim-Point.mxd PRINTED ON: 2018-10-12 AT: 12:09:15 PM



LEGEND

- Known area of AFFF use
- Approximate area of AFFF use (anecdotal information provided by RTAW)
- Fire Extinguisher Decant Training Structure

Coordinate System:
GDA 1994 MGA Zone 54
Projection: Transverse Mercator
Datum: GDA 1994

0 10 20 30 40 50
Scale: 1:1,500 @ A3 METRES

NOTE(S)

Gazetter: © State of Queensland (Department of Natural Resources, Mines and Energy) 2018; **Watercourse:** © Geoscience Australia; **Approximate Area Of PFAS Use, Fire Extinguisher Decant Training Structure:** Provided by RTAW

REFERENCE(S)

Service Layer Credits: Sources: Esri, GEBCO, NOAA, National Geographic, Garmin, HERE, Geonames.org, and other contributors
Esri, Garmin, GEBCO, NOAA NGDC, and other contributors
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

TITLE

APPROXIMATE LOCATION OF FIRE TRAINING WITH AFFF - LORIM POINT FIRE AND RESCUE BUILDING (F&R BUILDING)

CONSULTANT

GOLDER

YYYY-MM-DD	2018-10-12
DESIGNED	DC
PREPARED	DC
REVIEWED	EC
APPROVED	GW

PROJECT NO.	CONTROL	REV.	FIGURE
18100235	007	0	9A

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ISO A3

0 25mm

PATH: R:\01 Client\18100235\18100235\99_PROJECTS\007\18100235-007-R-F009B-Rev0-AFFF-Weipa-Airport.mxd PRINTED ON: 2018-10-12 AT: 12:02:28 PM



LEGEND

Approximate area of AFFF use and years of use (anecdotal information provided by RTAW)

Coordinate System:
GDA 1994 MGA Zone 54
Projection: Transverse Mercator
Datum: GDA 1994

0 100 200 300 400 500
Scale: 1:10,000 @ A3 METRES

NOTE(S)

Gazetter: © State of Queensland (Department of Natural Resources, Mines and Energy) 2018
Watercourse: © Geoscience Australia.
Approximate Area Of PFAS Use, Fire Extinguisher Decant Training Structure: Provided by RTAW

REFERENCE(S)

Service Layer Credits: Sources: Esri, GEBCO, NOAA, National Geographic, Garmin, HERE, Geonames.org, and other contributors
Esri, Garmin, GEBCO, NOAA NGDC, and other contributors
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

TITLE

APPROXIMATE LOCATION AND YEAR OF FIRE TRAINING WITH AFFF - WEIPA AIRPORT

CONSULTANT

GOLDER

YYYY-MM-DD	2018-10-12
DESIGNED	DC
PREPARED	DC
REVIEWED	EC
APPROVED	GW

PROJECT NO.	CONTROL	REV.	FIGURE
18100235	007	0	9B

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ISO A3

25mm

0



LEGEND

Location Type

- Test Pit (TP03)
- Surface Sample (SS02)

Watercourse

- Major
- Minor

The position of investigation locations are approximate and based on information provided by RTAW and GPS readings by Golder over a number of years. This figure is intended for general reference only and is not to be used for detailed assessment of local features

Screening Criteria	Halo Colour
Concentration ≥ Guideline Value	
Concentration ≥ Half of the Guideline Value	
Concentration < Half of the Guideline Value	

Guideline Value	PFHxS/PFOS mg/kg	PFOA mg/kg
Soil – Human health screening values – Industrial/commercial *(NEMP 2018)*	20	50

Coordinate System: GDA 1994 MGA Zone 54
Projection: Transverse Mercator
Datum: GDA 1994

0 1 2 3
1:80,000 @ A3 Kilometres

REFERENCE(S)

Gazetter: © State of Queensland (Department of Natural Resources, Mines and Energy) 2018
Watercourse: © Geoscience Australia. Data received from Client 04/10/2017.

NOTE(S)

Service Layer Credits: Esri, Garmin, GEBCO, NOAA NGDC, and other contributors
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Basemap: Pan-sharpened Landsat 8 OLI Image Service, 31/07/2017

CONSULTANT

GOLDER

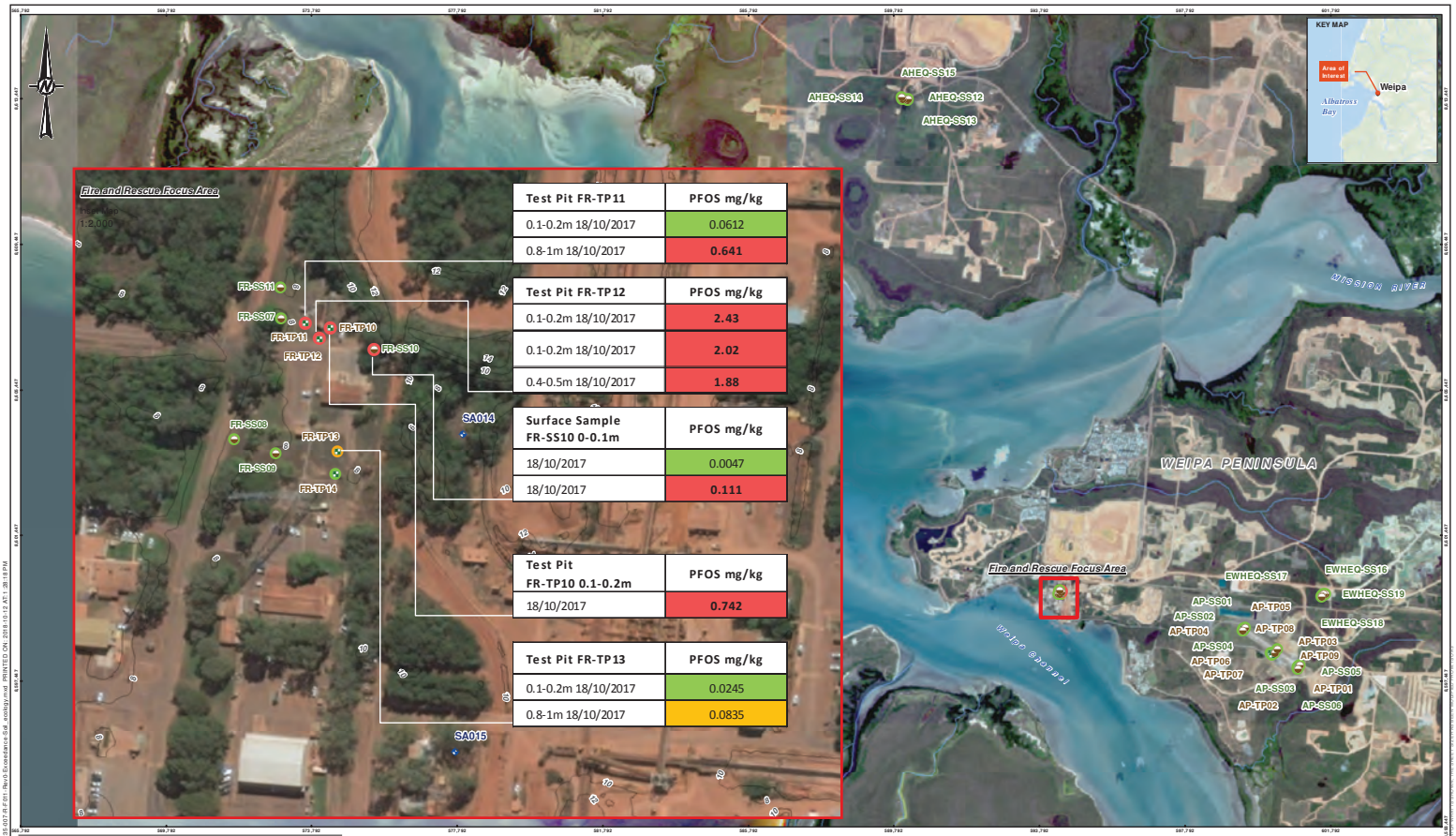
YYYY-MM-DD	2018-10-12
DESIGNED	DC
PREPARED	DC
REVIEWED	EC
APPROVED	GW

TITLE

SUMMARY OF PFAS CONCENTRATIONS FOR SOIL SAMPLES SCREENED AGAINST HUMAN HEALTH GUIDELINE VALUES

PROJECT NO.	CONTROL	REV.	FIGURE
18100235	007	0	10

PATH: R:\01 Client\81008\18100235\69 PROJECTS\07\18100235-007-r3-Feb16-Rev2-Exceedance-Soil_Humanrural PRINTED ON: 2018-10-12 AT: 1:31:31 PM



LEGEND

Location Type
- Test Pit (TP03)
- Surface Sample (SS02)
- Potable Water Bore (SA017)

Watercourse
- Major
- Minor

Elevation
- Contour (2 metre)

The position of investigation locations are approximate and based on information provided by RTAW and GPS readings by Golder over a number of years. This figure is intended for general reference only and is not to be used for detailed assessment of local features

Screening Criteria	Halo Colour
Concentration ≥ Guideline Value	
Concentration ≥ Half of the Guideline Value	
Concentration < Half of the Guideline Value	

Guideline Value	PFOS mg/kg
Interim soil – ecological indirect exposure - Industrial/commercial (NEMP 2018)	0.140

Coordinate System: GDA 1994 MGA Zone 54
Projection: Transverse Mercator
Datum: GDA 1994

0 1 2 3 4
1:100,000 @ A3 Kilometres

REFERENCE(S)
Gazetter: © State of Queensland (Department of Natural Resources, Mines and Energy) 2018
Watercourse: © Geoscience Australia.

NOTE(S)
Service Layer Credits: Esri, Garmin, GEBCO, NOAA NGDC, and other contributors
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Basemap: Pan-sharpened Landsat 8 OLI Image Service, 31/07/2017

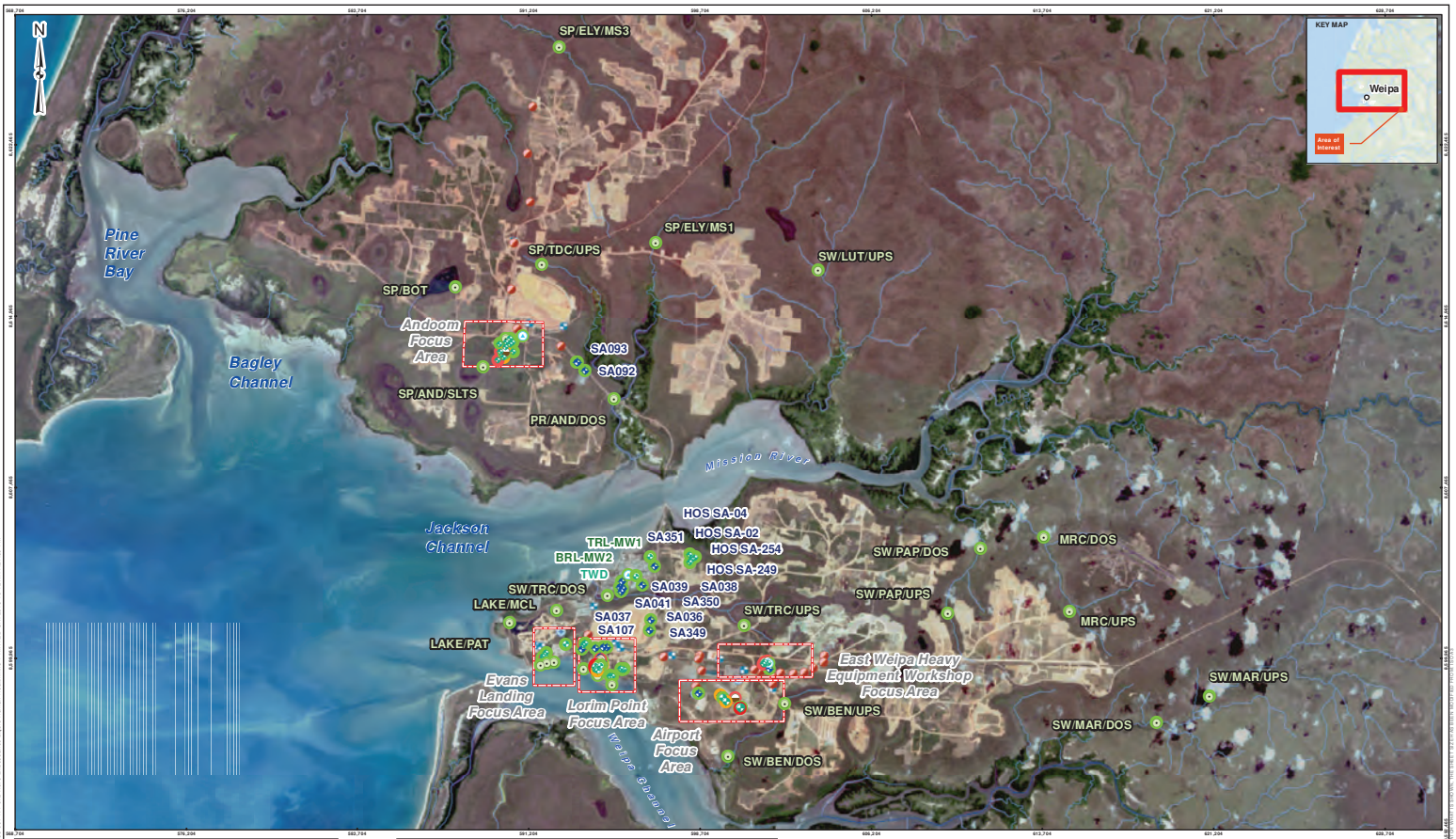
CONSULTANT
GOLDER

YYYY-MM-DD	2018-10-12
DESIGNED	DC
PREPARED	DC
REVIEWED	EC
APPROVED	GW

TITLE
SUMMARY OF PFAS CONCENTRATIONS FOR SOIL SAMPLES SCREENED AGAINST ECOLOGICAL GUIDELINE VALUES

PROJECT NO.	CONTROL	REV.	FIGURE
18100235	007	0	11

R:\Pl...\Cad\18100235\18100235-007-R-Rev0-Exceedance-Soil_ecology.mxd PRINTED ON: 2018-10-12 AT: 1:38:10 PM



LEGEND

Location Type

- Accumulation Points (TWD)
- Groundwater Monitoring Well (BH101)
- Potable Water Bore (SA017)
- Soil Leachate Samples (SS012, TP012)
- Surface Water (PR/AND/WS)

Regional Wells *(Not Sampled)*

- Monitoring
- Potable
- Non-Potable Processing

Watercourse

- Major
- Minor
- Exceedance Focus Area

The position of investigation locations are approximate and based on information provided by RTAW and GPS readings by Golder over a number of years. This figure is intended for general reference only and is not to be used for detailed assessment of local features

Screening Criteria	Halo Colour
Concentration ≥ Guideline Value	
Concentration ≥ Half of the Guideline Value	
Concentration < Half of the Guideline Value	

Guideline Value	PFHxS/PFOS µg/L
Health-based guidance values – Drinking Water *(NEMP 2018)*	0.07

Coordinate System:
GDA 1994 MGA Zone 54
Projection: Transverse Mercator
Datum: GDA 1994

0 1,500 3,000 4,500 6,000 7,500
1:160,000 @ A3 METRES

REFERENCE(S)
Gazetter: © State of Queensland (Department of Natural Resources, Mines and Energy) 2018
Watercourse: © Geoscience Australia.

CONSULTANT
GOLDER

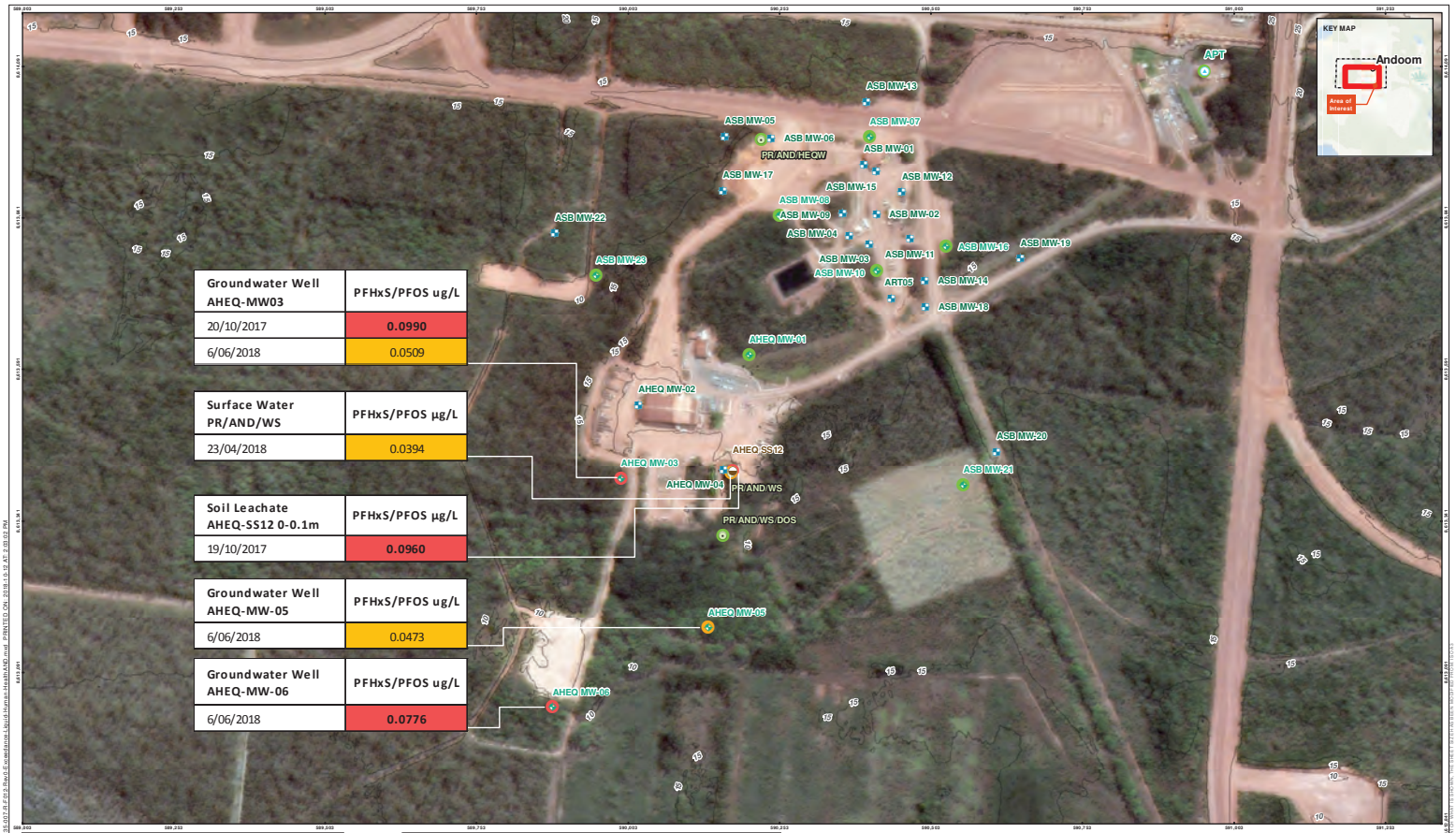
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DESIGNED	DC
PREPARED	DC
REVIEWED	EC
APPROVED	GW

NOTE(S)
Service Layer Credits: Esri, Garmin, GEBCO, NOAA NGDC, and other contributors
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Basemap: Pan-sharpened Landsat 8 OLI Image Service, 31/07/2017

TITLE
SUMMARY OF PFAS CONCENTRATIONS FOR WATER SAMPLES SCREENED AGAINST HUMAN HEALTH GUIDELINE VALUES
Overview

PROJECT NO.	CONTROL	REV.	FIGURE
18100235	007	0	12

R:\TH_R-01 Clients\18100235\18100235_007_R-F012 Rev0 Exceedance-Liquid-Human Health.mxd PRINTED ON: 2018-10-12 AT 1:27:36 PM



LEGEND

Location Type

- Accumulation Points (TWD)
- Groundwater Monitoring Well (BH101)
- Potable Water Bore (SA017)
- Soil Leachate Samples (SS012, TP012)
- Surface Water (PR/AND/WS)

Regional Wells *(Not Sampled)*

- Monitoring
- Potable
- Non-Potable Processing
- 5 metre contour

The position of investigation locations are approximate and based on information provided by RTAW and GPS readings by Golder over a number of years. This figure is intended for general reference only and is not to be used for detailed assessment of local features

Screening Criteria	Halo Colour
Concentration ≥ Guideline Value	
Concentration ≥ Half of the Guideline Value	
Concentration < Half of the Guideline Value	

Guideline Value	PFHxS/PFOS µg/L
Health-based guidance values – Drinking Water *(NEMP 2018)*	0.07

Coordinate System: GDA 1994 MGA Zone 54
Projection: Transverse Mercator
Datum: GDA 1994

0 50 100 150 200 250
1:5,000 @ A3
METRES

REFERENCE(S)

Gazetter: © State of Queensland (Department of Natural Resources, Mines and Energy) 2018
Watercourse: © Geoscience Australia.
Topographic Contours: Provided by RTAW

CONSULTANT

GOLDER

YYYY-MM-DD	2018-10-12
DESIGNED	DC
PREPARED	DC
REVIEWED	EC
APPROVED	GW

NOTE(S)

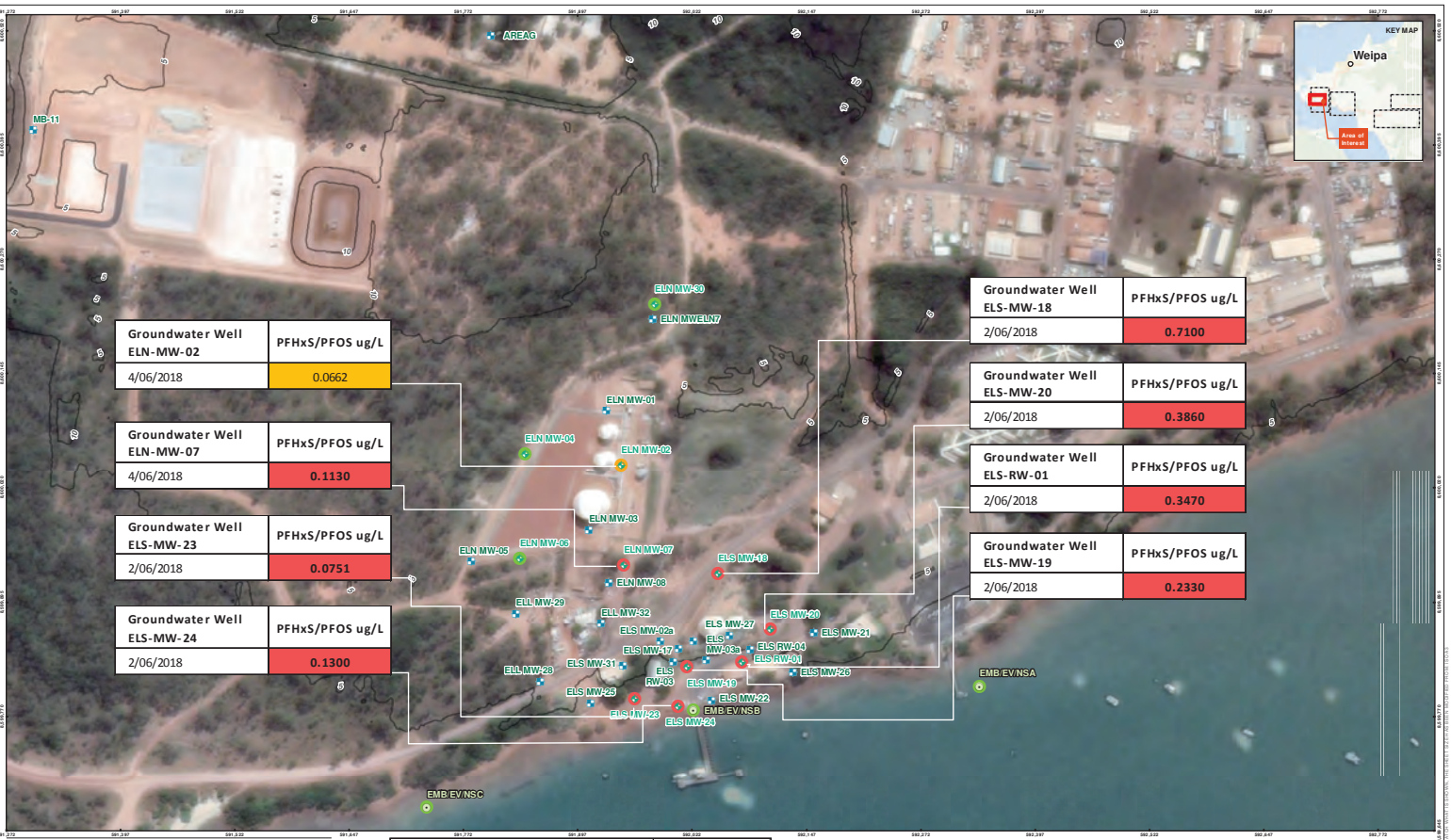
Service Layer Credits: Esri, Garmin, GEBCO, NOAA NGDC, and other contributors
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community. **Basemap:** © Planet Labs Netherlands B.V 2017, reproduced under licence from Planet and Geoplex, all rights reserved. Data acquired under the QSat Initiative.

TITLE

SUMMARY OF PFAS CONCENTRATIONS FOR WATER SAMPLES SCREENED AGAINST HUMAN HEALTH GUIDELINE VALUES

Andoom Focus Area

PROJECT NO.	CONTROL	REV.	FIGURE
18100235	007	0	12



Groundwater Well ELN-MW-02	PFHxS/PFOS ug/L
4/06/2018	0.0662

Groundwater Well ELN-MW-07	PFHxS/PFOS ug/L
4/06/2018	0.1130

Groundwater Well ELS-MW-23	PFHxS/PFOS ug/L
2/06/2018	0.0751

Groundwater Well ELS-MW-24	PFHxS/PFOS ug/L
2/06/2018	0.1300

Groundwater Well ELS-MW-18	PFHxS/PFOS ug/L
2/06/2018	0.7100

Groundwater Well ELS-MW-20	PFHxS/PFOS ug/L
2/06/2018	0.3860

Groundwater Well ELS-RW-01	PFHxS/PFOS ug/L
2/06/2018	0.3470

Groundwater Well ELS-MW-19	PFHxS/PFOS ug/L
2/06/2018	0.2330

LEGEND

Location Type

- Accumulation Points (TWD)
- Groundwater Monitoring Well (BH101)
- Potable Water Bore (SA017)
- Soil Leachate Samples (SS012, TP012)
- Surface Water (PR/AND/WS)

Regional Wells *(Not Sampled)*

- Monitoring
- Potable
- Non-Potable Processing
- 5 metre contour

The position of investigation locations are approximate and based on information provided by RTAW and GPS readings by Golder over a number of years. This figure is intended for general reference only and is not to be used for detailed assessment of local features

Screening Criteria	Halo Colour
Concentration ≥ Guideline Value	
Concentration ≥ Half of the Guideline Value	
Concentration < Half of the Guideline Value	

Guideline Value	PFHxS/PFOS µg/L
Health-based guidance values – Drinking Water *(NEMP 2018)*	0.07

Coordinate System: GDA 1994 MGA Zone 54
Projection: Transverse Mercator
Datum: GDA 1994

0 25 50 75 100 125
1:4,000 @ A3 METRES

REFERENCE(S)
Gazetter: © State of Queensland (Department of Natural Resources, Mines and Energy) 2018 **Watercourse:** © Geoscience Australia.
Topographic Contours: Provided by RTAW

NOTE(S)
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CONSULTANT
GOLDER

YYYY-MM-DD	2018-10-12
DESIGNED	DC
PREPARED	DC
REVIEWED	EC
APPROVED	GW

TITLE
SUMMARY OF PFAS CONCENTRATIONS FOR WATER SAMPLES SCREENED AGAINST HUMAN HEALTH GUIDELINE VALUES
Evans Landing Focus Area

PROJECT NO.	CONTROL	REV.	FIGURE
18100235	007	0	12



LEGEND

Location Type

- Accumulation Points (TWD)
- Groundwater Monitoring Well (BH101)
- Potable Water Bore (SA017)
- Soil Leachate Samples (SS012, TP012)
- Surface Water (PR/AND/WS)

Regional Wells *(Not Sampled)*

- Monitoring
- Potable
- Non-Potable Processing
- 5 metre contour

The position of investigation locations are approximate and based on information provided by RTAW and GPS readings by Golder over a number of years. This figure is intended for general reference only and is not to be used for detailed assessment of local features

Screening Criteria	Halo Colour
Concentration ≥ Guideline Value	
Concentration ≥ Half of the Guideline Value	
Concentration < Half of the Guideline Value	

Guideline Value	PFHxS/PFOS µg/L
Health-based guidance values – Drinking Water *(NEMP 2018)*	0.07

Coordinate System:
GDA 1994 MGA Zone 54
Projection: Transverse Mercator
Datum: GDA 1994

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1:9,000 @ A3
METRES

REFERENCE(S)
Gazetteer: © State of Queensland (Department of Natural Resources, Mines and Energy) 2018
Watercourse: © Geoscience Australia.
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CONSULTANT

GOLDER

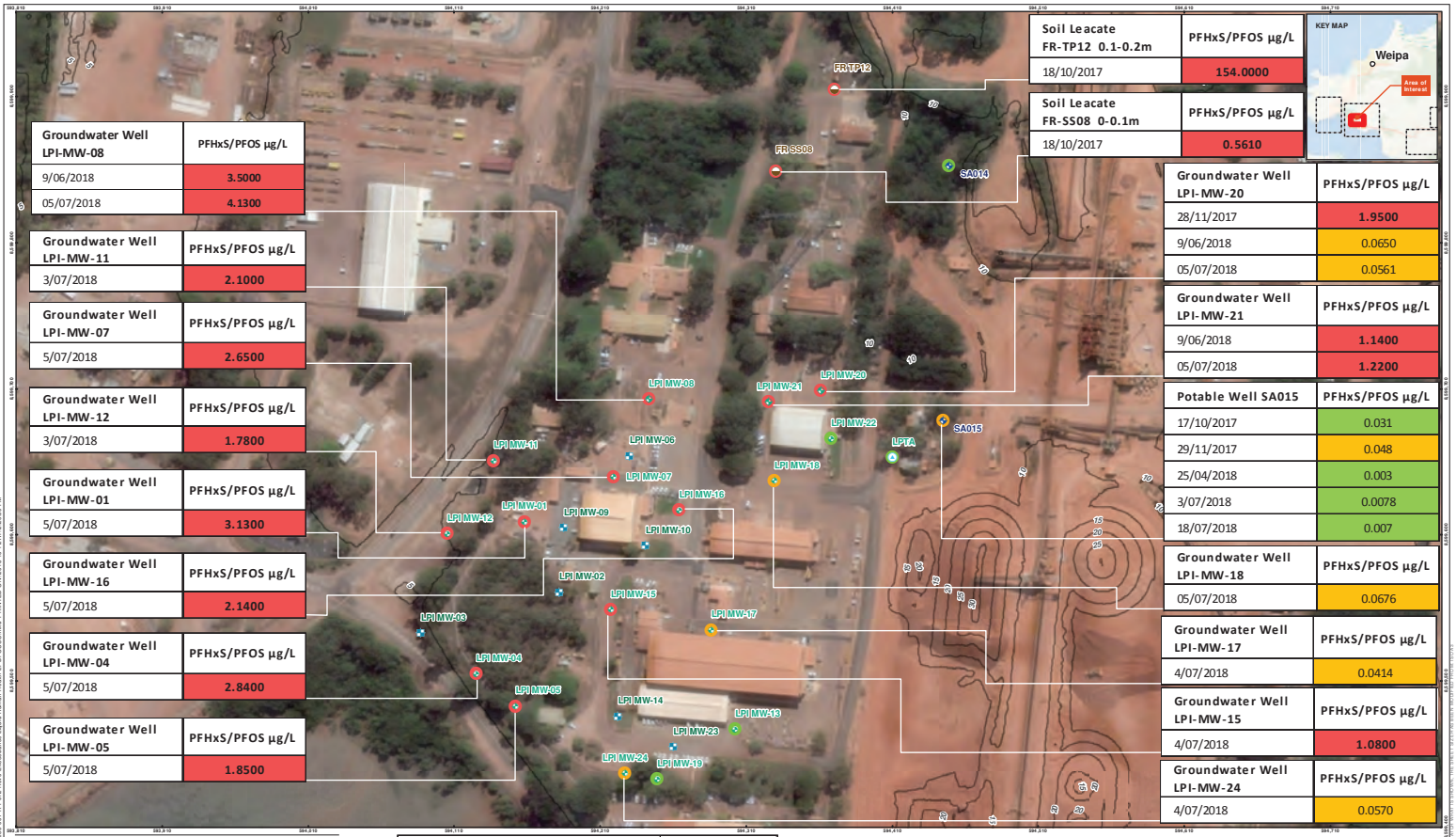
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PREPARED	DC
REVIEWED	EC
APPROVED	GW

NOTE(S)
Service Layer Credits: Esri, Garmin, GEBCO, NOAA NGDC, and other contributors Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
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TITLE
SUMMARY OF PFAS CONCENTRATIONS FOR WATER SAMPLES SCREENED AGAINST HUMAN HEALTH GUIDELINE VALUES
Lorim Point Focus Area Overview

PROJECT NO.	CONTROL	REV.	FIGURE
18100235	007	0	12

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Soil Leacate FR-TP12 0.1-0.2m	PFHxS/PFOS µg/L
18/10/2017	154.0000

Soil Leacate FR-SS08 0-0.1m	PFHxS/PFOS µg/L
18/10/2017	0.5610

Groundwater Well LPI-MW-08	PFHxS/PFOS µg/L
9/06/2018	3.5000
05/07/2018	4.1300

Groundwater Well LPI-MW-11	PFHxS/PFOS µg/L
3/07/2018	2.1000

Groundwater Well LPI-MW-07	PFHxS/PFOS µg/L
5/07/2018	2.6500

Groundwater Well LPI-MW-12	PFHxS/PFOS µg/L
3/07/2018	1.7800

Groundwater Well LPI-MW-01	PFHxS/PFOS µg/L
5/07/2018	3.1300

Groundwater Well LPI-MW-16	PFHxS/PFOS µg/L
5/07/2018	2.1400

Groundwater Well LPI-MW-04	PFHxS/PFOS µg/L
5/07/2018	2.8400

Groundwater Well LPI-MW-05	PFHxS/PFOS µg/L
5/07/2018	1.8500

Groundwater Well LPI-MW-20	PFHxS/PFOS µg/L
28/11/2017	1.9500
9/06/2018	0.0650
05/07/2018	0.0561

Groundwater Well LPI-MW-21	PFHxS/PFOS µg/L
9/06/2018	1.1400
05/07/2018	1.2200

Potable Well SA015	PFHxS/PFOS µg/L
17/10/2017	0.031
29/11/2017	0.048
25/04/2018	0.003
3/07/2018	0.0078
18/07/2018	0.007

Groundwater Well LPI-MW-18	PFHxS/PFOS µg/L
05/07/2018	0.0676

Groundwater Well LPI-MW-17	PFHxS/PFOS µg/L
4/07/2018	0.0414

Groundwater Well LPI-MW-15	PFHxS/PFOS µg/L
4/07/2018	1.0800

Groundwater Well LPI-MW-24	PFHxS/PFOS µg/L
4/07/2018	0.0570

LEGEND

Location Type

- Accumulation Points (TWD)
- Groundwater Monitoring Well (BH101)
- Potable Water Bore (SA017)
- Soil Leachate Samples (SS012, TP012)
- Surface Water (PR/AND/WS)

Regional Wells *(Not Sampled)*

- Monitoring
- Potable
- Non-Potable Processing
- 5 metre contour

The position of investigation locations are approximate and based on information provided by RTAW and GPS readings by Golder over a number of years. This figure is intended for general reference only and is not to be used for detailed assessment of local features

Screening Criteria	Halo Colour
Concentration ≥ Guideline Value	
Concentration ≥ Half of the Guideline Value	
Concentration < Half of the Guideline Value	

Guideline Value	PFHxS/PFOS µg/L
Health-based guidance values – Drinking Water *(NEMP 2018)*	0.07

Coordinate System: GDA 1994 MGA Zone 54
Projection: Transverse Mercator
Datum: GDA 1994

0 20 40 60 80 100
1:2,500 @ A3
METRES

REFERENCE(S)
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Topographic Contours: Provided by RTAW

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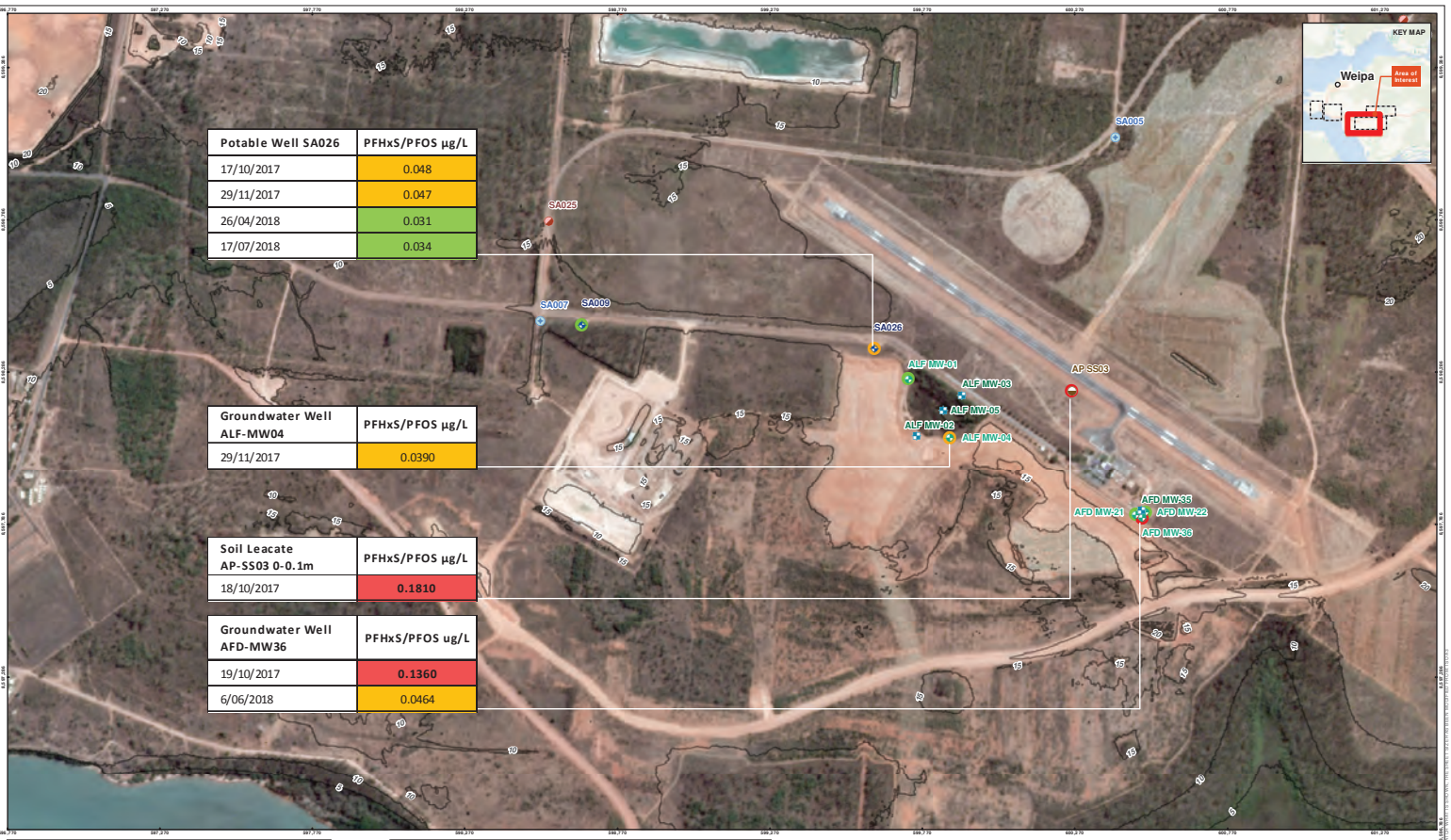
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REVIEWED	EC
APPROVED	GW

NOTE(S)
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TITLE
SUMMARY OF PFAS CONCENTRATIONS FOR WATER SAMPLES SCREENED AGAINST HUMAN HEALTH GUIDELINE VALUES
Lorim Point Jetty Focus Area

PROJECT NO.	CONTROL	REV.	FIGURE
18100235	007	0	12

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Potable Well SA026	PFHxS/PFOS µg/L
17/10/2017	0.048
29/11/2017	0.047
26/04/2018	0.031
17/07/2018	0.034

Groundwater Well ALF-MW04	PFHxS/PFOS µg/L
29/11/2017	0.0390

Soil Leacate AP-SS03 0-0.1m	PFHxS/PFOS µg/L
18/10/2017	0.1810

Groundwater Well AFD-MW36	PFHxS/PFOS ug/L
19/10/2017	0.1360
6/06/2018	0.0464

LEGEND

Location Type

- Accumulation Points (TWD)
- Groundwater Monitoring Well (BH101)
- Potable Water Bore (SA017)
- Soil Leachate Samples (SS012, TP012)
- Surface Water (PR/AND/WS)

Regional Wells *(Not Sampled)*

- Monitoring
- Potable
- Non-Potable Processing
- 5 metre contour

The position of investigation locations are approximate and based on information provided by RTAW and GPS readings by Golder over a number of years. This figure is intended for general reference only and is not to be used for detailed assessment of local features

Screening Criteria	Halo Colour
Concentration ≥ Guideline Value	
Concentration ≥ Half of the Guideline Value	
Concentration < Half of the Guideline Value	

Guideline Value	PFHxS/PFOS µg/L
Health-based guidance values – Drinking Water *(NEMP 2018)*	0.07

Coordinate System: GDA 1994 MGA Zone 54
Projection: Transverse Mercator
Datum: GDA 1994

0 100 200 300 400 500
1:12,000 @ A3 METRES

REFERENCE(S)
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Watercourse: © Geoscience Australia.
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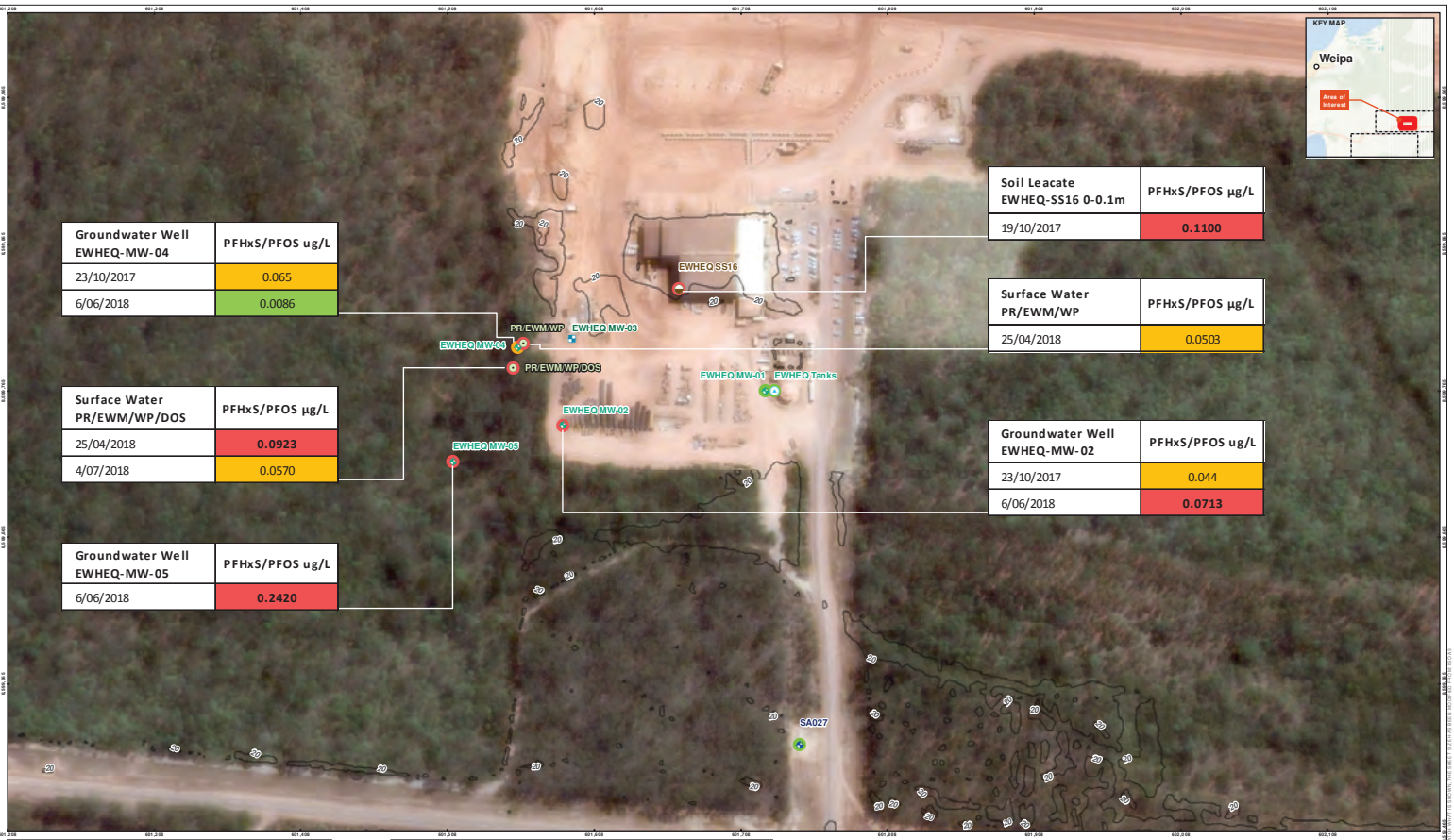
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PREPARED	DC
REVIEWED	EC
APPROVED	GW

TITLE

SUMMARY OF PFAS CONCENTRATIONS FOR WATER SAMPLES SCREENED AGAINST HUMAN HEALTH GUIDELINE VALUES

Airport Focus Area

PROJECT NO.	CONTROL	REV.	FIGURE
18100235	007	0	12



Groundwater Well EWHEQ-MW-04	PFHxS/PFOS ug/L
23/10/2017	0.065
6/06/2018	0.0086

Soil Leacate EWHEQ-SS16 0-0.1m	PFHxS/PFOS µg/L
19/10/2017	0.1100

Surface Water PR/EWM/WP	PFHxS/PFOS µg/L
25/04/2018	0.0503

Surface Water PR/EWM/WP/DOS	PFHxS/PFOS µg/L
25/04/2018	0.0923
4/07/2018	0.0570

Groundwater Well EWHEQ-MW-02	PFHxS/PFOS ug/L
23/10/2017	0.044
6/06/2018	0.0713

Groundwater Well EWHEQ-MW-05	PFHxS/PFOS ug/L
6/06/2018	0.2420

LEGEND

Location Type

- Accumulation Points (TWD)
- Groundwater Monitoring Well (BH101)
- Potable Water Bore (SA017)
- Soil Leachate Samples (SS012, TP012)
- Surface Water (PR/AND/WS)

Regional Wells *(Not Sampled)*

- Monitoring
- Potable
- Non-Potable Processing
- 5 metre contour

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Screening Criteria	Halo Colour
Concentration ≥ Guideline Value	
Concentration ≥ Half of the Guideline Value	
Concentration < Half of the Guideline Value	

Guideline Value	PFHxS/PFOS µg/L
Health-based guidance values – Drinking Water *(NEMP 2018)*	0.07

Coordinate System: GDA 1994 MGA Zone 54
Projection: Transverse Mercator
Datum: GDA 1994

0 20 40 60 80 100
1:2,500 @ A3 METRES

REFERENCE(S)

Gazetter: © State of Queensland (Department of Natural Resources, Mines and Energy) 2018 **Watercourse:** © Geoscience Australia.
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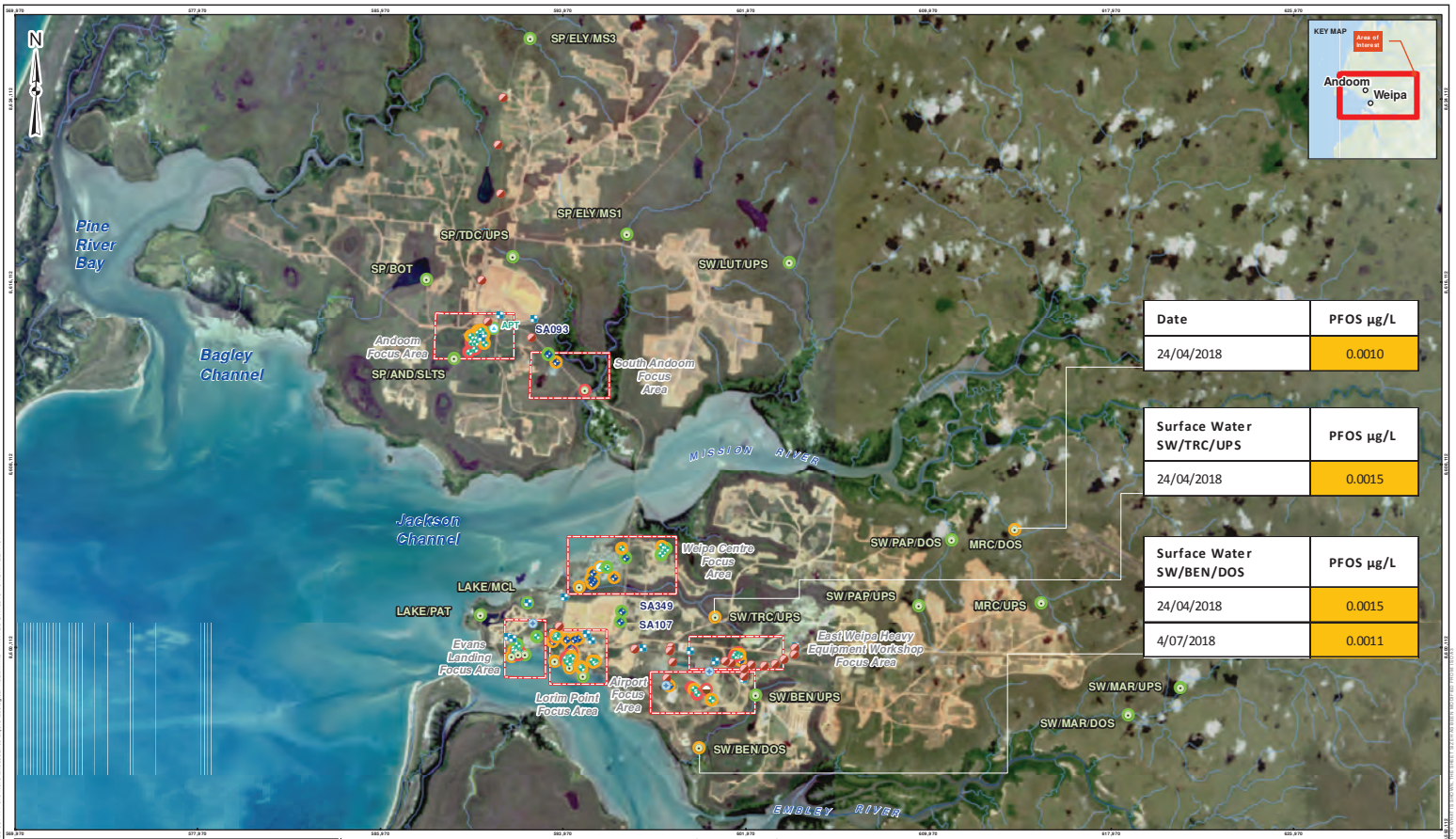
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PREPARED	DC
REVIEWED	EC
APPROVED	GW

TITLE

SUMMARY OF PFAS CONCENTRATIONS FOR WATER SAMPLES SCREENED AGAINST HUMAN HEALTH GUIDELINE VALUES

East Weipa Heavy Equipment Workshop Focus Area

PROJECT NO.	CONTROL	REV.	FIGURE
18100235	007	0	12



Date	PFOS µg/L
24/04/2018	0.0010

Surface Water SW/TRC/UPS	PFOS µg/L
24/04/2018	0.0015

Surface Water SW/BEN/DOS	PFOS µg/L
24/04/2018	0.0015
4/07/2018	0.0011

LEGEND

Location Type
- Accumulation Points (TWD)
- Groundwater Monitoring Well (BH101)
- Potable Water Bore (SA017)
- Soil Leachate Samples (SS012, TP012)
- Surface Water (PR/AND/WS)

Regional Wells *(Not Sampled)*
- Monitoring
- Potable
- Non-Potable Processing

Watercourse
- Major
- Minor
- Focus Area

The position of investigation locations are approximate and based on information provided by RTAW and GPS readings by Golder over a number of years. This figure is intended for general reference only and is not to be used for detailed assessment of local features

Screening Criteria	Halo Colour
Concentration > 2 orders of magnitude above 99% Species Protection	
Concentration > 99% Species Protection	
Concentration < LOR	

Guideline Value	PFOS µg/L
Aquatic Ecosystem – Freshwater - 99% species protection *(NEMP 2018)*	0.00023

Coordinate System: GDA 1994 MGA Zone 54
Projection: Transverse Mercator
Datum: GDA 1994

0 2 4 6 8
1:160,000 @ A3 KILOMETRES

REFERENCE(S)

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Basemap: Pan-sharpened Landsat 8 OLI Image Service, 31/07/2017

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GOLDER

YYYY-MM-DD	2018-10-12
DESIGNED	DC
PREPARED	DC
REVIEWED	EC
APPROVED	GW

TITLE

SUMMARY OF PFAS CONCENTRATIONS FOR WATER SAMPLES SCREENED AGAINST ECOLOGICAL GUIDELINE VALUES

Overview

PROJECT NO.	CONTROL	REV.	FIGURE
18100235	007	0	13

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LEGEND

Location Type

- Accumulation Points (TWD)
- Groundwater Monitoring Well (BH101)
- Potable Water Bore (SA017)
- Soil Leachate Samples (SS012, TP012)
- Surface Water (PR/AND/WS)

Regional Wells *(Not Sampled)*

- Monitoring
- Potable
- Non-Potable Processing
- 5 metre contour

The position of investigation locations are approximate and based on information provided by RTAW and GPS readings by Golder over a number of years. This figure is intended for general reference only and is not to be used for detailed assessment of local features

Screening Criteria	Halo Colour
Concentration > 2 orders of magnitude above 99% Species Protection	
Concentration > 99% Species Protection	
Concentration < LOR	

Guideline Value	PFOS µg/L
Aquatic Ecosystem – Freshwater - 99% species protection *(NEMP 2018)*	0.00023

Coordinate System: GDA 1994 MGA Zone 54
Projection: Transverse Mercator
Datum: GDA 1994

0 50 100 150 200
1:6,000 @ A3 METRES

REFERENCE(S)

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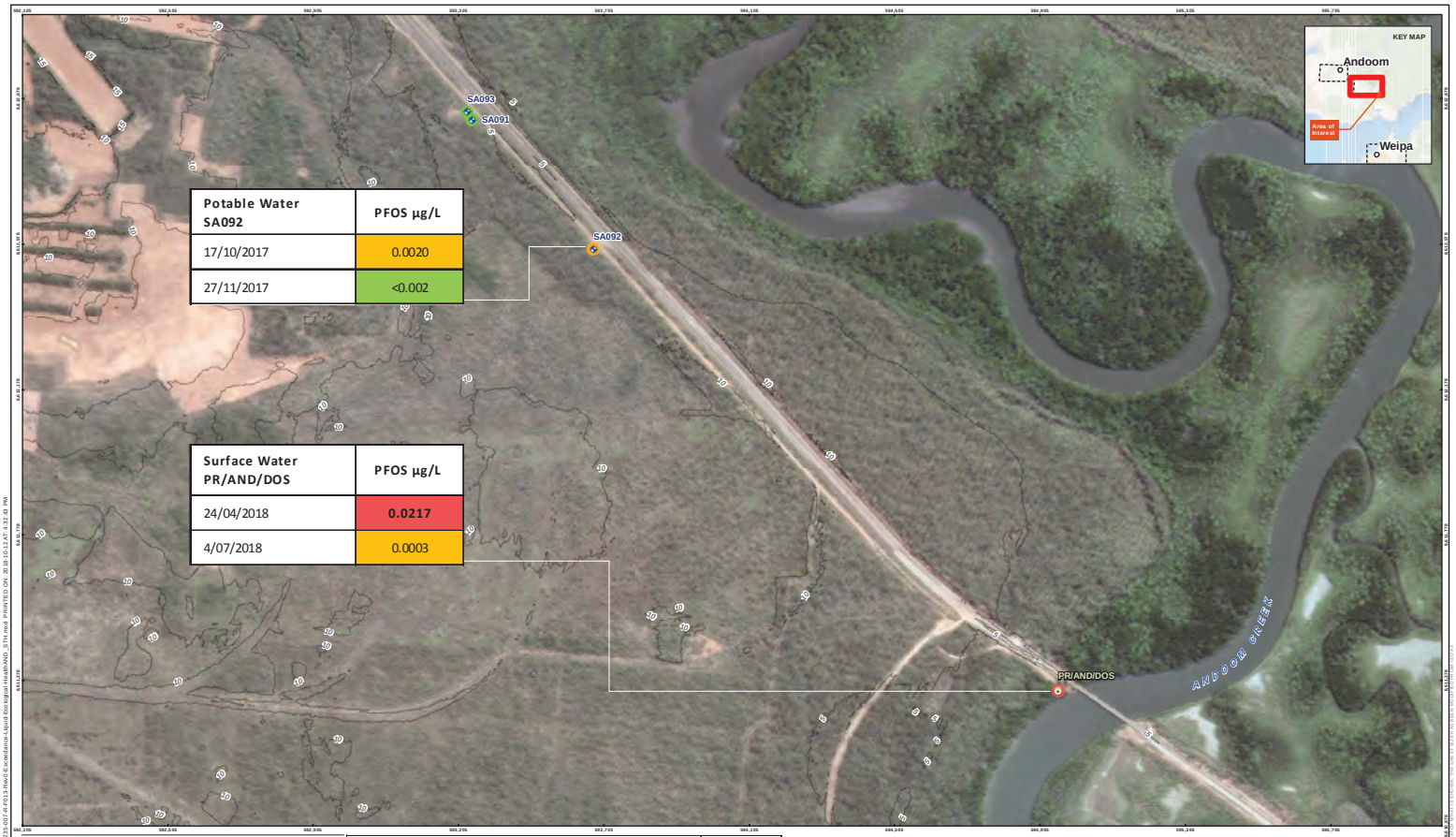
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REVIEWED	EC
APPROVED	GW

TITLE

SUMMARY OF PFAS CONCENTRATIONS FOR WATER SAMPLES SCREENED AGAINST ECOLOGICAL GUIDELINE VALUES

Andoom Focus Area

PROJECT NO.	CONTROL	REV.	FIGURE
18100235	007	0	13



Potable Water SA092	PFOS µg/L
17/10/2017	0.0020
27/11/2017	<0.002

Surface Water PR/AND/DOS	PFOS µg/L
24/04/2018	**0.0217**
4/07/2018	0.0003

LEGEND

Location Type
- Accumulation Points (TWD)
- Groundwater Monitoring Well (BH101)
- Potable Water Bore (SA017)
- Soil Leachate Samples (SS012, TP012)
- Surface Water (PR/AND/WS)
- 5 metre contour

Watercourse
- Major
- Minor

The position of investigation locations are approximate and based on information provided by RTAW and GPS readings by Golder over a number of years. This figure is intended for general reference only and is not to be used for detailed assessment of local features

Screening Criteria	Halo Colour
Concentration > 2 orders of magnitude above 99% Species Protection	
Concentration > 99% Species Protection	
Concentration < LOR	

Guideline Value	PFOS µg/L
Aquatic Ecosystem – Freshwater - 99% species protection *(NEMP 2018)*	0.00023

Coordinate System: GDA 1994 MGA Zone 54
Projection: Transverse Mercator
Datum: GDA 1994

0 100 200 300 400
1:10,000 @ A3 METRES

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GOLDER

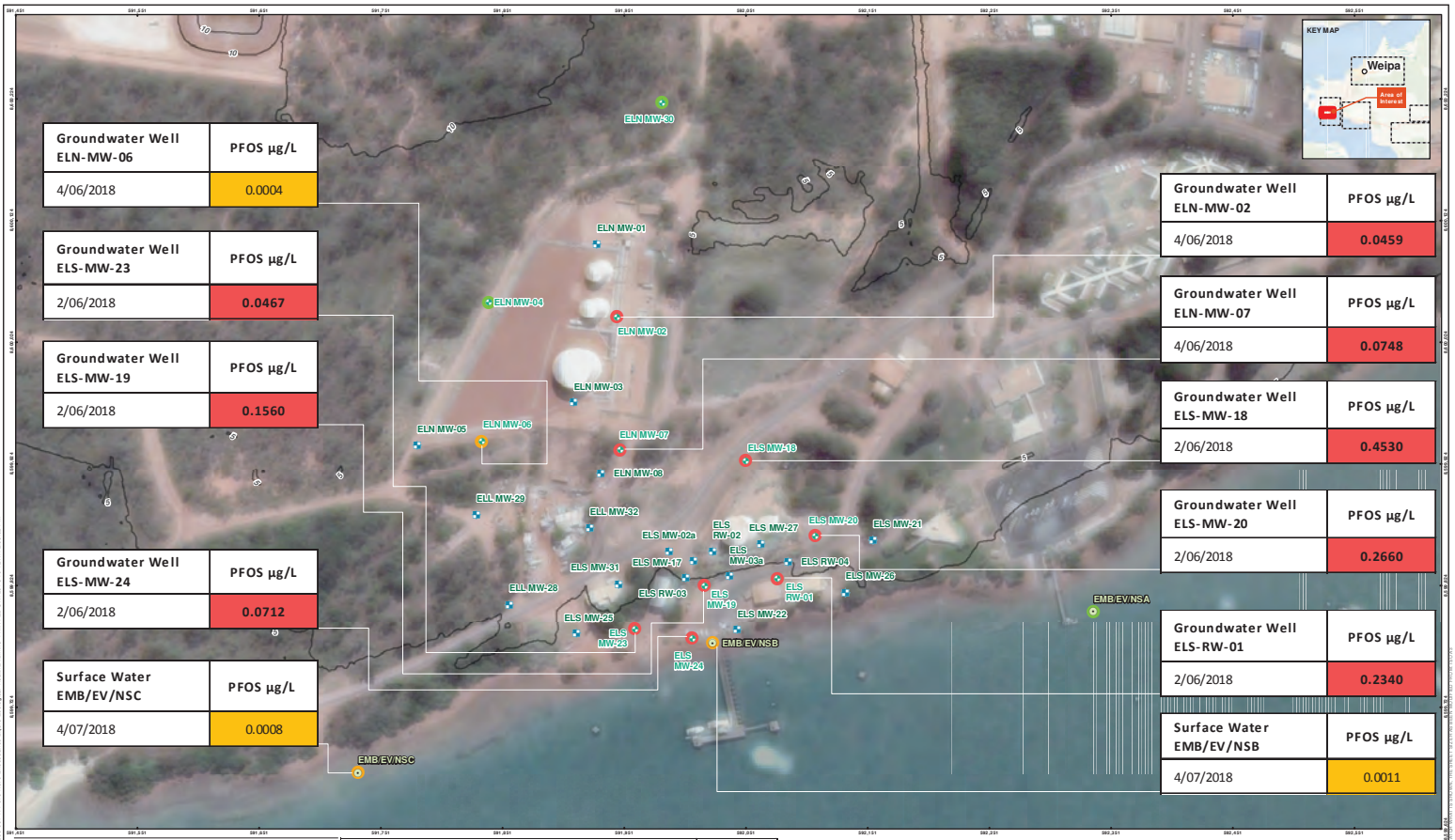
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PREPARED	DC
REVIEWED	EC
APPROVED	GW

TITLE
SUMMARY OF PFAS CONCENTRATIONS FOR WATER SAMPLES SCREENED AGAINST ECOLOGICAL GUIDELINE VALUES
South Andoom Focus Area

PROJECT NO.	CONTROL	REV.	FIGURE
18100235	007	0	13

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LEGEND

Location Type

- Accumulation Points (TWD)
- Groundwater Monitoring Well (BH101)
- Potable Water Bore (SA017)
- Soil Leachate Samples (SS012, TP012)
- Surface Water (PR/AND/WS)

Regional Wells *(Not Sampled)*

- Monitoring
- Potable
- Non-Potable Processing
- 5 metre contour

The position of investigation locations are approximate and based on information provided by RTAW and GPS readings by Golder over a number of years. This figure is intended for general reference only and is not to be used for detailed assessment of local features

Screening Criteria	Halo Colour
Concentration > 2 orders of magnitude above 99% Species Protection	
Concentration > 99% Species Protection	
Concentration < LOR	

Guideline Value	PFOS µg/L
Aquatic Ecosystem – Freshwater - 99% species protection *(NEMP 2018)*	0.00023

Coordinate System: GDA 1994 MGA Zone 54
Projection: Transverse Mercator
Datum: GDA 1994

0 20 40 60 80 100
1:3,000 @ A3 METRES

REFERENCE(S)

Gazetter: © State of Queensland (Department of Natural Resources, Mines and Energy) 2018
Watercourse: © Geoscience Australia.
Topographic Contours: Provided by RTAW

NOTE(S)

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CONSULTANT

GOLDER

YYYY-MM-DD	2018-10-12
DESIGNED	DC
PREPARED	DC
REVIEWED	EC
APPROVED	GW

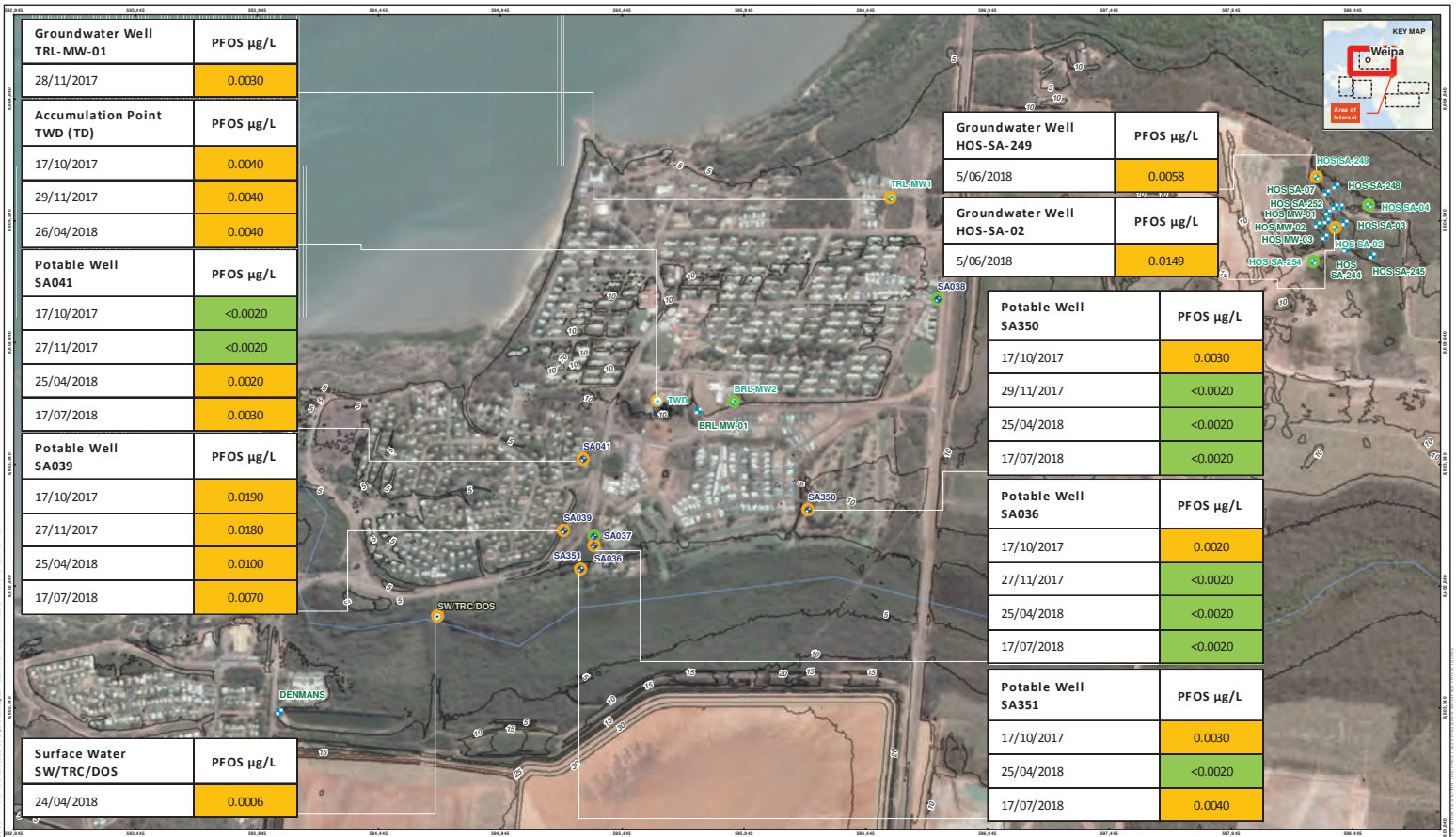
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SUMMARY OF PFAS CONCENTRATIONS FOR WATER SAMPLES SCREENED AGAINST ECOLOGICAL GUIDELINE VALUES

Evans Landing Focus Area

PROJECT NO.	CONTROL	REV.	FIGURE
18100235	007	0	13

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Groundwater Well TRL-MW-01	PFOS µg/L
28/11/2017	0.0030

Accumulation Point TWD (TD)	PFOS µg/L
17/10/2017	0.0040
29/11/2017	0.0040
26/04/2018	0.0040

Potable Well SA041	PFOS µg/L
17/10/2017	<0.0020
27/11/2017	<0.0020
25/04/2018	0.0020
17/07/2018	0.0030

Potable Well SA039	PFOS µg/L
17/10/2017	0.0190
27/11/2017	0.0180
25/04/2018	0.0100
17/07/2018	0.0070

Surface Water SW/TRC/DOS	PFOS µg/L
24/04/2018	0.0006

Groundwater Well HOS-SA-249	PFOS µg/L
5/06/2018	0.0058

Groundwater Well HOS-SA-02	PFOS µg/L
5/06/2018	0.0149

Potable Well SA350	PFOS µg/L
17/10/2017	0.0030
29/11/2017	<0.0020
25/04/2018	<0.0020
17/07/2018	<0.0020

Potable Well SA036	PFOS µg/L
17/10/2017	0.0020
27/11/2017	<0.0020
25/04/2018	<0.0020
17/07/2018	<0.0020

Potable Well SA351	PFOS µg/L
17/10/2017	0.0030
25/04/2018	<0.0020
17/07/2018	0.0040

LEGEND

Location Type
- Accumulation Points (TWD)
- Groundwater Monitoring Well (BH101)
- Potable Water Bore (SA017)
- Soil Leachate Samples (SS012, TP012)
- Surface Water (PR/AND/WS)

Regional Wells *(Not Sampled)*
- Monitoring
- Potable
- Non-Potable Processing

- 5 metre contour

Watercourse
- Major
- Minor

The position of investigation locations are approximate and based on information provided by RTAW and GPS readings by Golder over a number of years. This figure is intended for general reference only and is not to be used for detailed assessment of local features

Screening Criteria	Halo Colour
Concentration > 2 orders of magnitude above 99% Species Protection	
Concentration > 99% Species Protection	
Concentration < LOR	

Guideline Value	PFOS µg/L
Aquatic Ecosystem – Freshwater - 99% species protection *(NEMP 2018)*	0.00023

Coordinate System: GDA 1994 MGA Zone 54
Projection: Transverse Mercator
Datum: GDA 1994

0 100 200 300 400 500
1:15,000 @ A3 METRES

REFERENCE(S)

Gazetteer: © State of Queensland (Department of Natural Resources, Mines and Energy) 2018
Watercourse: © Geoscience Australia.
Topographic Contours: Provided by RTAW

NOTE(S)

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CONSULTANT

GOLDER

YYYY-MM-DD	2018-10-12
DESIGNED	DC
PREPARED	DC
REVIEWED	EC
APPROVED	GW

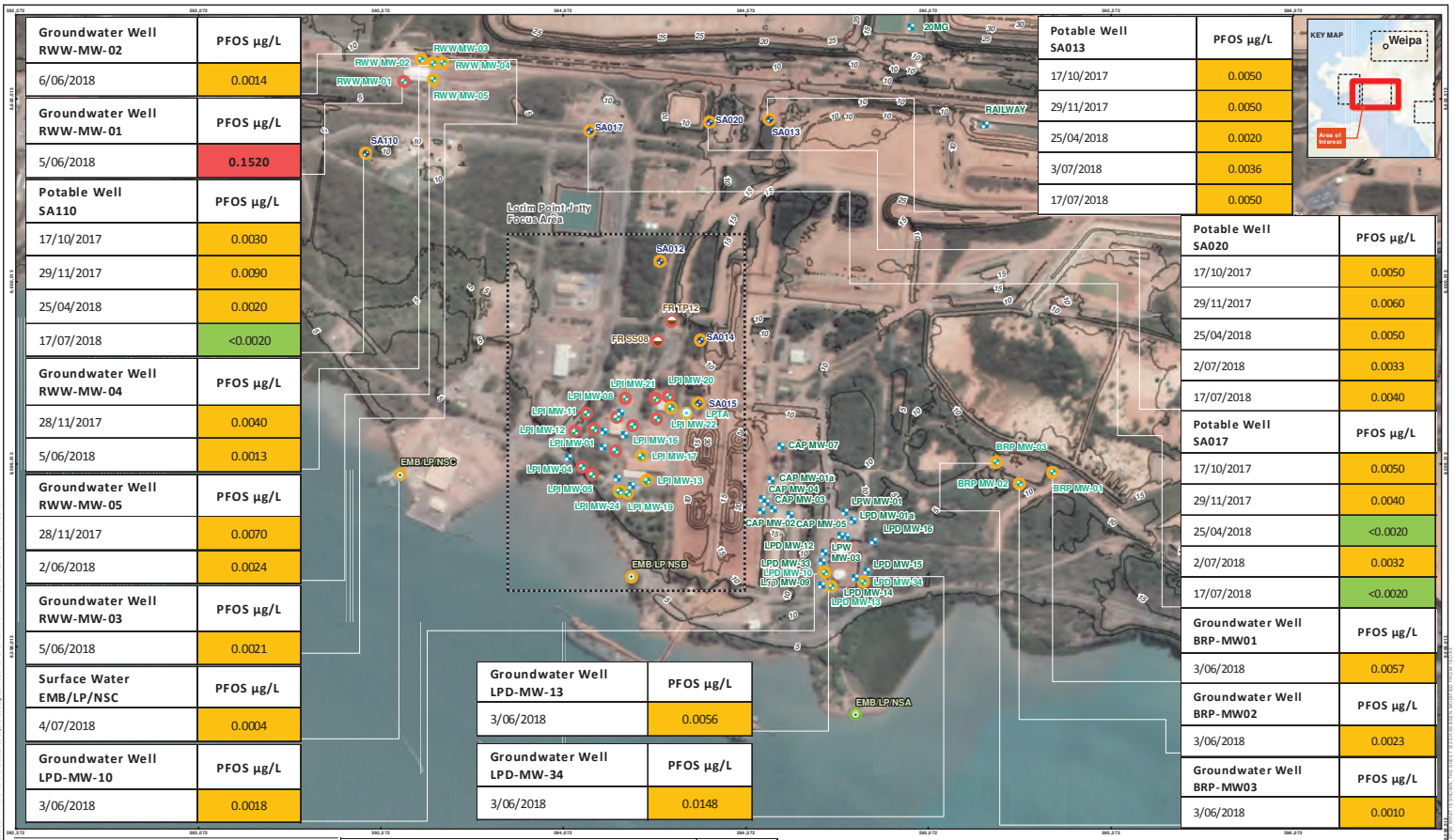
TITLE

SUMMARY OF PFAS CONCENTRATIONS FOR WATER SAMPLES SCREENED AGAINST ECOLOGICAL GUIDELINE VALUES

Weipa Centre Focus Area

PROJECT NO.	CONTROL	REV.	FIGURE
18100235	007	0	13

PATH: R:\01 Client\18100235\18 100235\99_PROJECTS\07\18100235-007-R-Rev3-Exceedance-Liquid-Ecological-HealthWEP.mxd PRINTED ON: 2018-10-12 AT 3:14:06 PM



Groundwater Well RWW-MW-02	PFOS µg/L
6/06/2018	0.0014

Groundwater Well RWW-MW-01	PFOS µg/L
5/06/2018	0.1520

Potable Well SA110	PFOS µg/L
17/10/2017	0.0030
29/11/2017	0.0090
25/04/2018	0.0020
17/07/2018	<0.0020

Groundwater Well RWW-MW-04	PFOS µg/L
28/11/2017	0.0040
5/06/2018	0.0013

Groundwater Well RWW-MW-05	PFOS µg/L
28/11/2017	0.0070
2/06/2018	0.0024

Groundwater Well RWW-MW-03	PFOS µg/L
5/06/2018	0.0021

Surface Water EMB/LP/NSC	PFOS µg/L
4/07/2018	0.0004

Groundwater Well LPD-MW-10	PFOS µg/L
3/06/2018	0.0018

Groundwater Well LPD-MW-13	PFOS µg/L
3/06/2018	0.0056

Groundwater Well LPD-MW-34	PFOS µg/L
3/06/2018	0.0148

Potable Well SA013	PFOS µg/L
17/10/2017	0.0050
29/11/2017	0.0050
25/04/2018	0.0020
3/07/2018	0.0036
17/07/2018	0.0050

Potable Well SA020	PFOS µg/L
17/10/2017	0.0050
29/11/2017	0.0060
25/04/2018	0.0050
2/07/2018	0.0033
17/07/2018	0.0040

Potable Well SA017	PFOS µg/L
17/10/2017	0.0050
29/11/2017	0.0040
25/04/2018	<0.0020
2/07/2018	0.0032
17/07/2018	<0.0020

Groundwater Well BRP-MW01	PFOS µg/L
3/06/2018	0.0057

Groundwater Well BRP-MW02	PFOS µg/L
3/06/2018	0.0023

Groundwater Well BRP-MW03	PFOS µg/L
3/06/2018	0.0010

LEGEND

Location Type

- Accumulation Points (TWD)
- Groundwater Monitoring Well (BH101)
- Potable Water Bore (SA017)
- Soil Leachate Samples (SS012, TP012)
- Surface Water (PR/AND/WS)

Regional Wells *(Not Sampled)*

- Monitoring
- Potable
- Non-Potable Processing
- 5 metre contour

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Screening Criteria	Halo Colour
Concentration > 2 orders of magnitude above 99% Species Protection	
Concentration > 99% Species Protection	
Concentration < LOR	

Guideline Value	PFOS µg/L
Aquatic Ecosystem – Freshwater - 99% species protection *(NEMP 2018)*	0.00023

Coordinate System: GDA 1994 MGA Zone 54
Projection: Transverse Mercator
Datum: GDA 1994

0 100 200 300 400 500
1:10,000 @ A3 METRES

REFERENCE(S)

Gazetter: © State of Queensland (Department of Natural Resources, Mines and Energy) 2018
Watercourse: © Geoscience Australia.
Topographic Contours: Provided by RTAW

NOTE(S)

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CONSULTANT

GOLDER

YYYY-MM-DD	2018-10-12
DESIGNED	DC
PREPARED	DC
REVIEWED	EC
APPROVED	GW

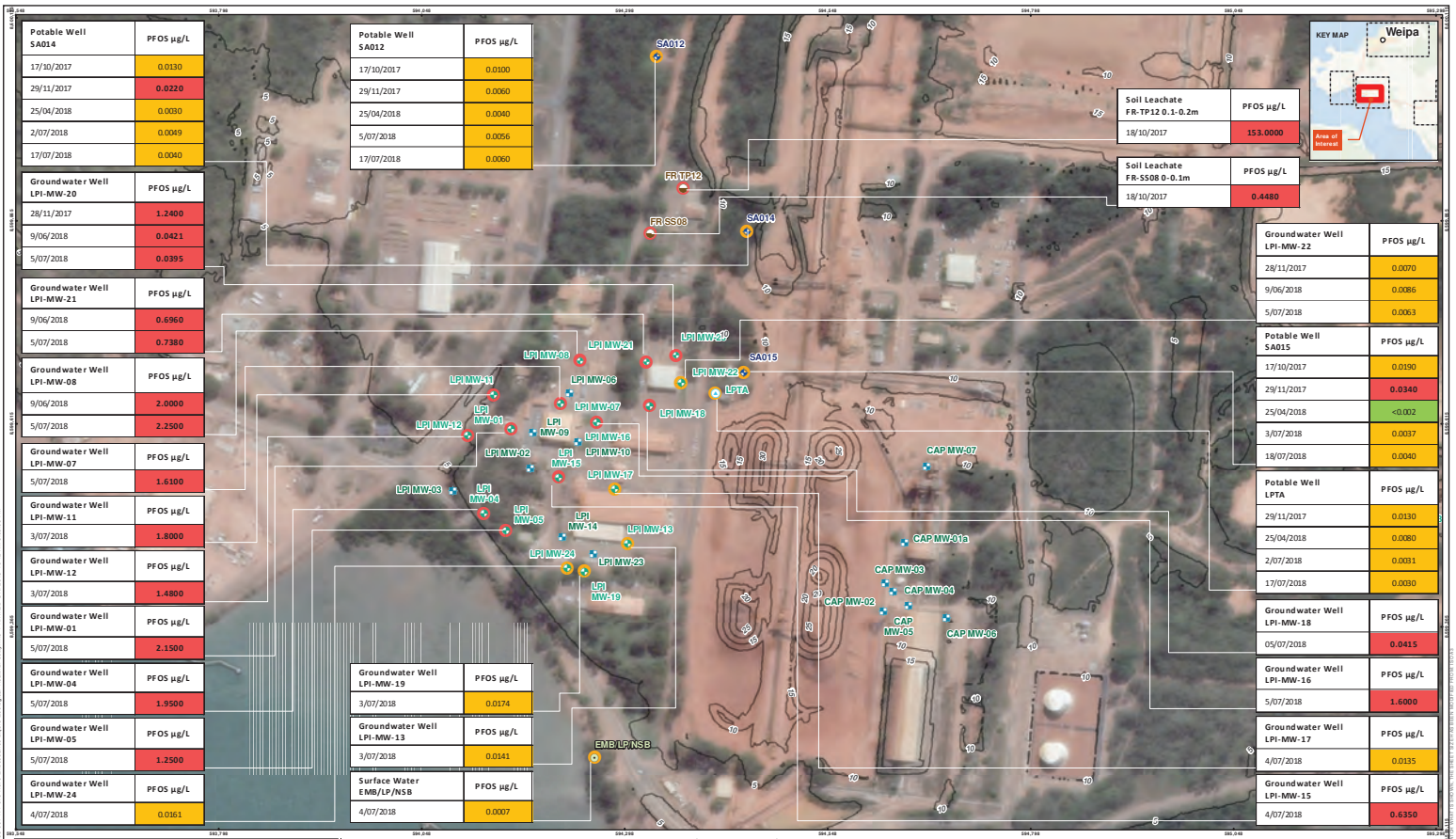
TITLE

SUMMARY OF PFAS CONCENTRATIONS FOR WATER SAMPLES SCREENED AGAINST ECOLOGICAL GUIDELINE VALUES

Lorim Point Overview Focus Area

PROJECT NO.	CONTROL	REV.	FIGURE
18100235	007	0	13

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Potable Well SA014	PFOS µg/L
17/10/2017	0.0130
29/11/2017	0.0220
25/04/2018	0.0030
2/07/2018	0.0049
17/07/2018	0.0040

Potable Well SA012	PFOS µg/L
17/10/2017	0.0100
29/11/2017	0.0060
25/04/2018	0.0040
5/07/2018	0.0056
17/07/2018	0.0060

Soil Leachate FR-TP12 0.1-0.2m	PFOS µg/L
18/10/2017	153.0000

Soil Leachate FR-SS08 0-0.1m	PFOS µg/L
18/10/2017	0.4480

Groundwater Well LPI-MW-20	PFOS µg/L
28/11/2017	1.2400
9/06/2018	0.0421
5/07/2018	0.0395

Groundwater Well LPI-MW-21	PFOS µg/L
9/06/2018	0.6960
5/07/2018	0.7380

Groundwater Well LPI-MW-08	PFOS µg/L
9/06/2018	2.0000
5/07/2018	2.2500

Groundwater Well LPI-MW-07	PFOS µg/L
5/07/2018	1.6100

Groundwater Well LPI-MW-11	PFOS µg/L
3/07/2018	1.8000

Groundwater Well LPI-MW-12	PFOS µg/L
3/07/2018	1.4800

Groundwater Well LPI-MW-01	PFOS µg/L
5/07/2018	2.1500

Groundwater Well LPI-MW-04	PFOS µg/L
5/07/2018	1.9500

Groundwater Well LPI-MW-05	PFOS µg/L
5/07/2018	1.2500

Groundwater Well LPI-MW-24	PFOS µg/L
4/07/2018	0.0161

Groundwater Well LPI-MW-19	PFOS µg/L
3/07/2018	0.0174

Groundwater Well LPI-MW-13	PFOS µg/L
3/07/2018	0.0141

Surface Water EMB/LP/NSB	PFOS µg/L
4/07/2018	0.0007

Groundwater Well LPI-MW-22	PFOS µg/L
28/11/2017	0.0070
9/06/2018	0.0086
5/07/2018	0.0053

Potable Well SA015	PFOS µg/L
17/10/2017	0.0190
29/11/2017	0.0340
25/04/2018	<0.002
3/07/2018	0.0037
18/07/2018	0.0040

Potable Well LPTA	PFOS µg/L
29/11/2017	0.0130
25/04/2018	0.0080
2/07/2018	0.0031
17/07/2018	0.0030

Groundwater Well LPI-MW-18	PFOS µg/L
05/07/2018	0.0415

Groundwater Well LPI-MW-16	PFOS µg/L
5/07/2018	1.6000

Groundwater Well LPI-MW-17	PFOS µg/L
4/07/2018	0.0135

Groundwater Well LPI-MW-15	PFOS µg/L
4/07/2018	0.6350

LEGEND

Location Type
- Accumulation Points (TWD)
- Groundwater Monitoring Well (BH101)
- Potable Water Bore (SA017)
- Soil Leachate Samples (SS012, TP012)
- Surface Water (PR/AND/WS)

Regional Wells *(Not Sampled)*
- Monitoring
- Potable
- Non-Potable Processing
- 5 metre contour

The position of investigation locations are approximate and based on information provided by RTAW and GPS readings by Golder over a number of years. This figure is intended for general reference only and is not to be used for detailed assessment of local features

Screening Criteria	Halo Colour
Concentration > 2 orders of magnitude above 99% Species Protection	
Concentration > 99% Species Protection	
Concentration < LOR	

Guideline Value	PFOS µg/L
Aquatic Ecosystem – Freshwater - 99% species protection *(NEMP 2018)*	0.00023

Coordinate System: GDA 1994 MGA Zone 54
Projection: Transverse Mercator
Datum: GDA 1994

0 50 100 150 200 250
1:4,500 @ A3 METRES

REFERENCE(S)
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Watercourse: © Geoscience Australia.
Topographic Contours: Provided by RTAW

NOTE(S)
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CONSULTANT
GOLDER

YYYY-MM-DD	2018-10-12
DESIGNED	DC
PREPARED	DC
REVIEWED	EC
APPROVED	GW

TITLE
SUMMARY OF PFAS CONCENTRATIONS FOR WATER SAMPLES SCREENED AGAINST ECOLOGICAL GUIDELINE VALUES
Lorim Point Jetty Focus Area

PROJECT NO.	CONTROL	REV.	FIGURE
18100235	007	0	13

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PROJECTS\07\18100235_007_R\F013 Rev0 Exceedance Liquid-Ecological-HealthLP.aimxmd



Soil Leachate EWHEQ-SS16 0-0.1m	PFOS µg/L
19/10/2017	0.0690

Surface Water PR/EWM/WP	PFOS µg/L
25/04/2018	0.0391

Groundwater Well EWHEQ-MW-04	PFOS µg/L
23/10/2017	0.0430
6/06/2018	0.0041

Surface Water PR/EWM/WP/DOS	PFOS µg/L
25/04/2018	0.0614
4/07/2018	0.0272

Groundwater Well EWHEQ-MW-05	PFOS µg/L
6/06/2018	0.1560

Groundwater Well EWHEQ-MW-03	PFOS µg/L
23/10/2017	0.0130
6/06/2018	0.0171

Accumulation Point EWHEQ Tanks	PFOS µg/L
29/11/2017	0.0050

Groundwater Well EWHEQ-MW-01	PFOS µg/L
6/06/2018	0.0049

Groundwater Well EWHEQ-MW-02	PFOS µg/L
23/10/2017	0.0270
6/06/2018	0.0329

Potable Well SA027	PFOS µg/L
17/10/2017	0.0050
29/11/2017	0.0040
25/04/2018	0.0030
17/07/2018	0.0030

LEGEND

Location Type

- Accumulation Points (TWD)
- Groundwater Monitoring Well (BH101)
- Potable Water Bore (SA017)
- Soil Leachate Samples (SS012, TP012)
- Surface Water (PR/AND/WS)
- 5 metre contour

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Screening Criteria	Halo Colour
Concentration > 2 orders of magnitude above 99% Species Protection	
Concentration > 99% Species Protection	
Concentration < LOR	

Guideline Value	PFOS µg/L
Aquatic Ecosystem – Freshwater - 99% species protection *(NEMP 2018)*	0.00023

Coordinate System: GDA 1994 MGA Zone 54
Projection: Transverse Mercator
Datum: GDA 1994

0 20 40 60 80 100
1:2,500 @ A3 METRES

REFERENCE(S)

Gazetter: © State of Queensland (Department of Natural Resources, Mines and Energy) 2018
Watercourse: © Geoscience Australia.
Topographic Contours: Provided by RTAW

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GOLDER

YYYY-MM-DD	2018-10-12
DESIGNED	DC
PREPARED	DC
REVIEWED	EC
APPROVED	GW

TITLE

SUMMARY OF PFAS CONCENTRATIONS FOR WATER SAMPLES SCREENED AGAINST ECOLOGICAL GUIDELINE VALUES

East Weipa Heavy Equipment Workshop Focus Area

PROJECT NO.	CONTROL	REV.	FIGURE
18100235	007	0	13



Potable Well SA009	PFOS µg/L
17/10/2017	<0.002
29/11/2017	0.002
25/04/2018	0.007
17/07/2018	<0.002

Potable Well SA026	PFOS µg/L
17/10/2017	0.027
29/11/2017	0.026
26/04/2018	0.017
17/07/2018	0.014

Groundwater Well ALF-MW01	PFOS µg/L
29/11/2017	0.0140

Groundwater Well ALF-MW04	PFOS µg/L
29/11/2017	0.0260

Soil Leachate AP-SS03 0-0.1m	PFOS µg/L
18/10/2017	0.1730

Groundwater Well AFD-MW-22	PFOS µg/L
6/06/2018	0.0004

Groundwater Well AFD-MW36	PFOS µg/L
19/10/2017	0.0520
6/06/2018	0.0115

Groundwater Well AFD-MW21	PFOS µg/L
23/10/2017	0.0030
6/06/2018	0.0012

LEGEND

Location Type

- Accumulation Points (TWD)
- Groundwater Monitoring Well (BH101)
- Potable Water Bore (SA017)
- Soil Leachate Samples (SS012, TP012)
- Surface Water (PR/AND/WS)

Regional Wells *(Not Sampled)*

- Monitoring
- Potable
- Non-Potable Processing
- 5 metre contour

The position of investigation locations are approximate and based on information provided by RTAW and GPS readings by Golder over a number of years. This figure is intended for general reference only and is not to be used for detailed assessment of local features

Screening Criteria	Halo Colour
Concentration > 2 orders of magnitude above 99% Species Protection	
Concentration > 99% Species Protection	
Concentration < LOR	

Guideline Value	PFOS µg/L
Aquatic Ecosystem – Freshwater - 99% species protection *(NEMP 2018)*	0.00023

Coordinate System: GDA 1994 MGA Zone 54
Projection: Transverse Mercator
Datum: GDA 1994

0 100 200 300 400
1:10,000 @ A3 METRES

REFERENCE(S)

Gazetter: © State of Queensland (Department of Natural Resources, Mines and Energy) 2018
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CONSULTANT

GOLDER

YYYY-MM-DD	2018-10-12
DESIGNED	DC
PREPARED	DC
REVIEWED	EC
APPROVED	GW

TITLE

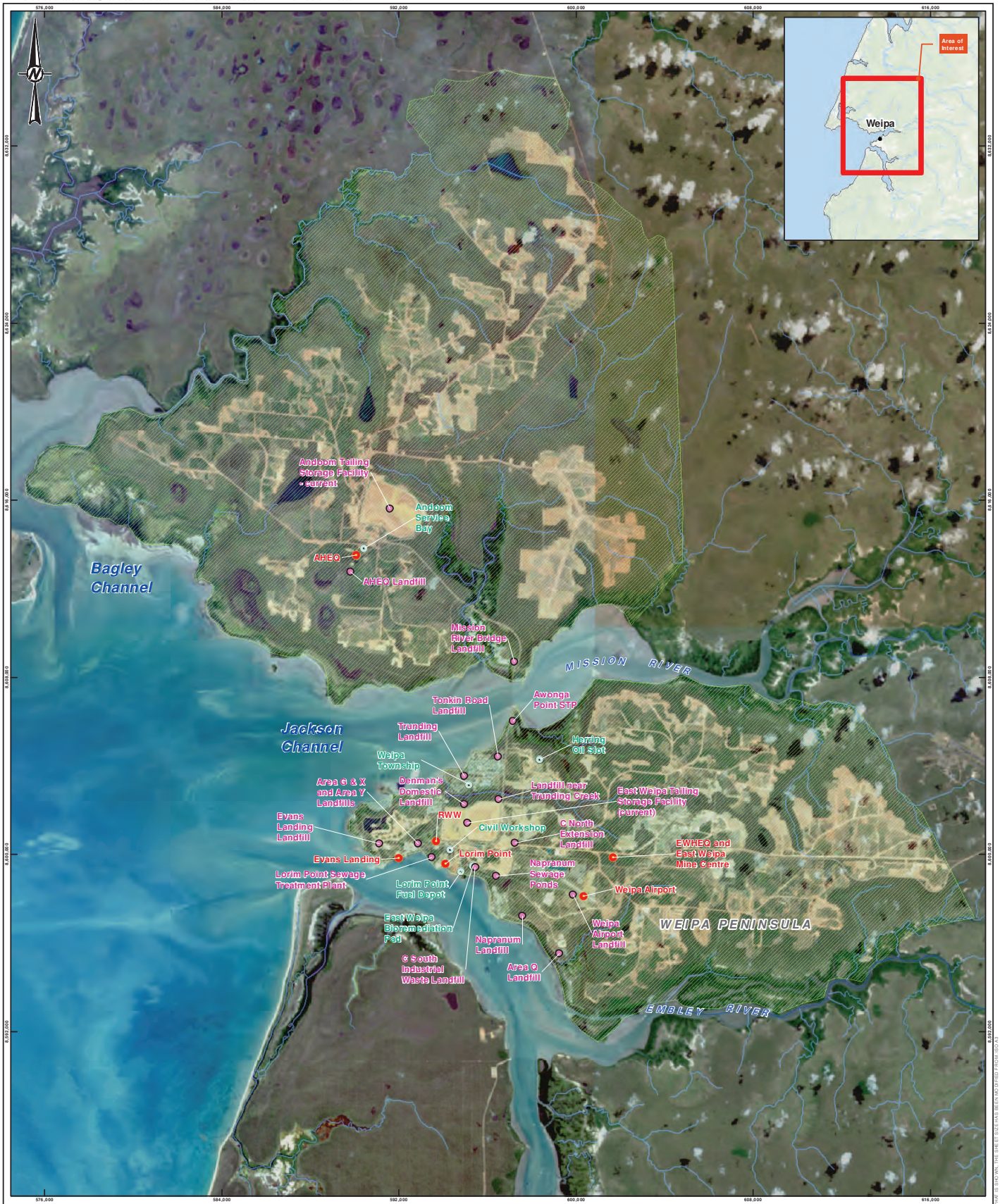
SUMMARY OF PFAS CONCENTRATIONS FOR WATER SAMPLES SCREENED AGAINST ECOLOGICAL GUIDELINE VALUES

Airport Focus Area

PROJECT NO.	CONTROL	REV.	FIGURE
18100235	007	0	13

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PATH: R:\01 Client\18100235\18100235\99_PROJECTS\007\18100235-007-R-F014-Rev0-Source Area Locations.mxd PRINTED ON: 2018-10-12 AT: 3:33:37 PM



LEGEND

Source Areas

- Primary Source Area
- Secondary Source Area
- Potential Source Area

Watercourse

- Major
- Minor

Secondary Source Area

- Surface Water in Mining and Non-mining areas

Coordinate System:
GDA 1994 MGA Zone 54
Projection: Transverse Mercator
Datum: GDA 1994

0 2 4 6 8
Scale: 1:160,000 @ A3 KILOMETRES

NOTE(S)

Gazetter: © State of Queensland (Department of Natural Resources, Mines and Energy) 2018
Watercourse: © Geoscience Australia.
Source Areas: Golder 2018

REFERENCE(S)

Service Layer Credits: Sources: Esri, GEBCO, NOAA, National Geographic, Garmin, HERE, Geonames.org, and other contributors
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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Basemap: Pan-sharpened Landsat 8 OLI Image Service, 31/07/2017

TITLE

SOURCE AREA LOCATIONS

CONSULTANT

GOLDER

YYYY-MM-DD	2018-10-12
DESIGNED	DC
PREPARED	DC
REVIEWED	EC
APPROVED	GW

PROJECT NO.	CONTROL	REV.	FIGURE
18100235	007	0	14

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ISO A1

0 20mm



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